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PRODUCING REFINING PIPELINE ENGINEERING MARKETING

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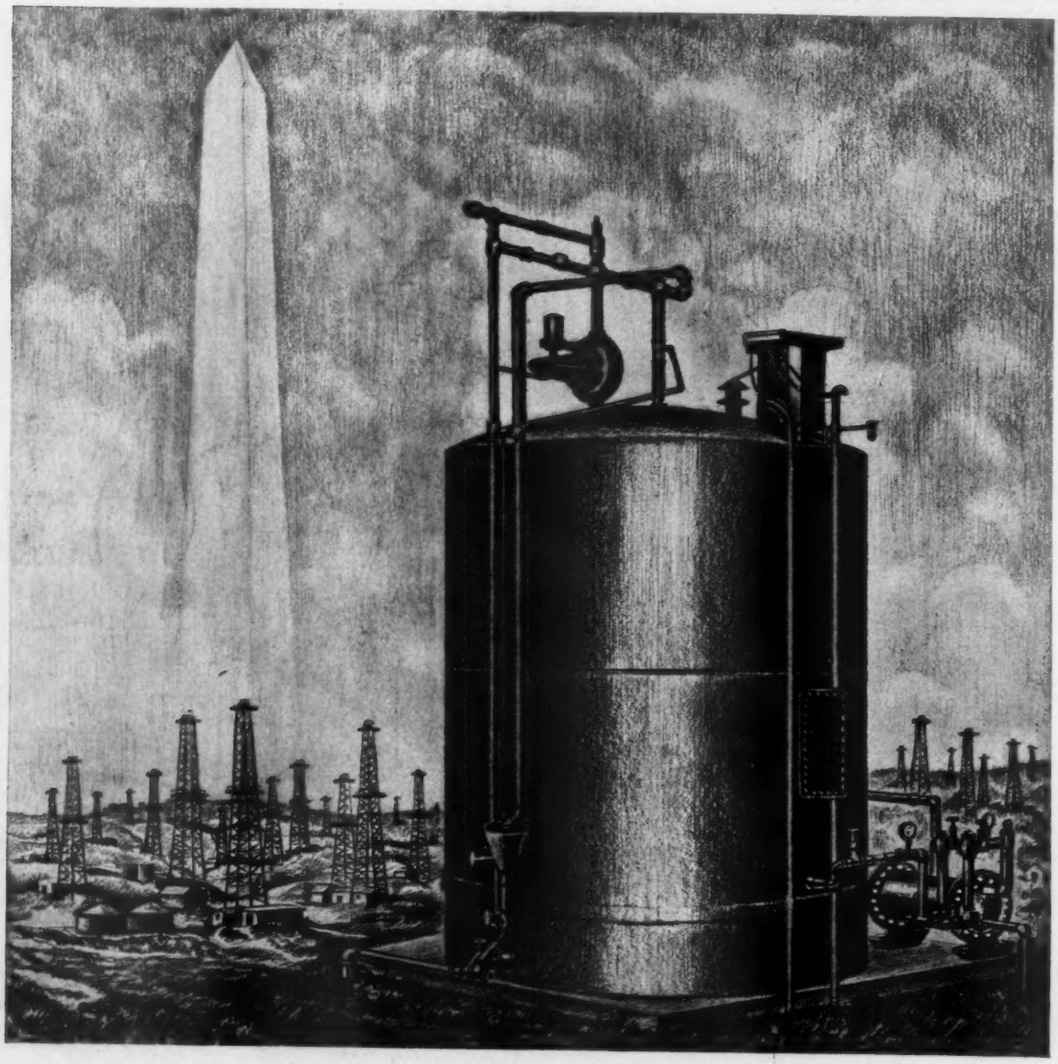
An important monument to efficient progress in the history of petroleum production



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Gasoline Prices Support Crude Raise

Highest production in 1931, week ending Aug. 8, average daily output 2,551,807 bbls. Peak of U. S. production, week ending Aug. 24, 1929, average 2,975,435 bbls.

Markets Continue to Display Strength. Little Change in Crude Oil Production Expected With Demand Increasing

By Andrew M. Rowley

Lowest daily average crude oil production in the United States during 1931 was for week ending Sept. 5 with average output of 1,736,007 bbls.

Gasoline prices, net back to the Mid-Continent refineries, have reached a level which entirely justify the recent advance in crude oil prices. The refined oil market has shown and is showing more strength than many had anticipated and there is a feeling the upward trend will continue if refiners will curtail their output to a little less than their requirements.

The crude oil situation is good. Production is below requirements and the spread between new supply and demand will continue to increase. Oil men who have studied the situation in the Mid-Continent area do not fear the higher crude oil prices will start any wild campaign of drilling. They point out many wildcatters who might start some activity are held back by lack of funds and the banks are not lending money for speculative drilling operations as they did in previous years. Also they contend the cost of drilling in the wildcat areas in which prospecting might be done is too high to be undertaken with the top price of crude oil only $1.00 a barrel.

The reluctance of some companies to meet the new schedule of crude oil prices is interpreted variously. The upward trend in gasoline prices with the market showing strength and no tinge of artificiality removes the contention gasoline prices do not warrant the higher crude oil schedule. Conditions mentioned above, which affect drilling operations, should allay the fear the increase will result in a drilling campaign which might flood the market.

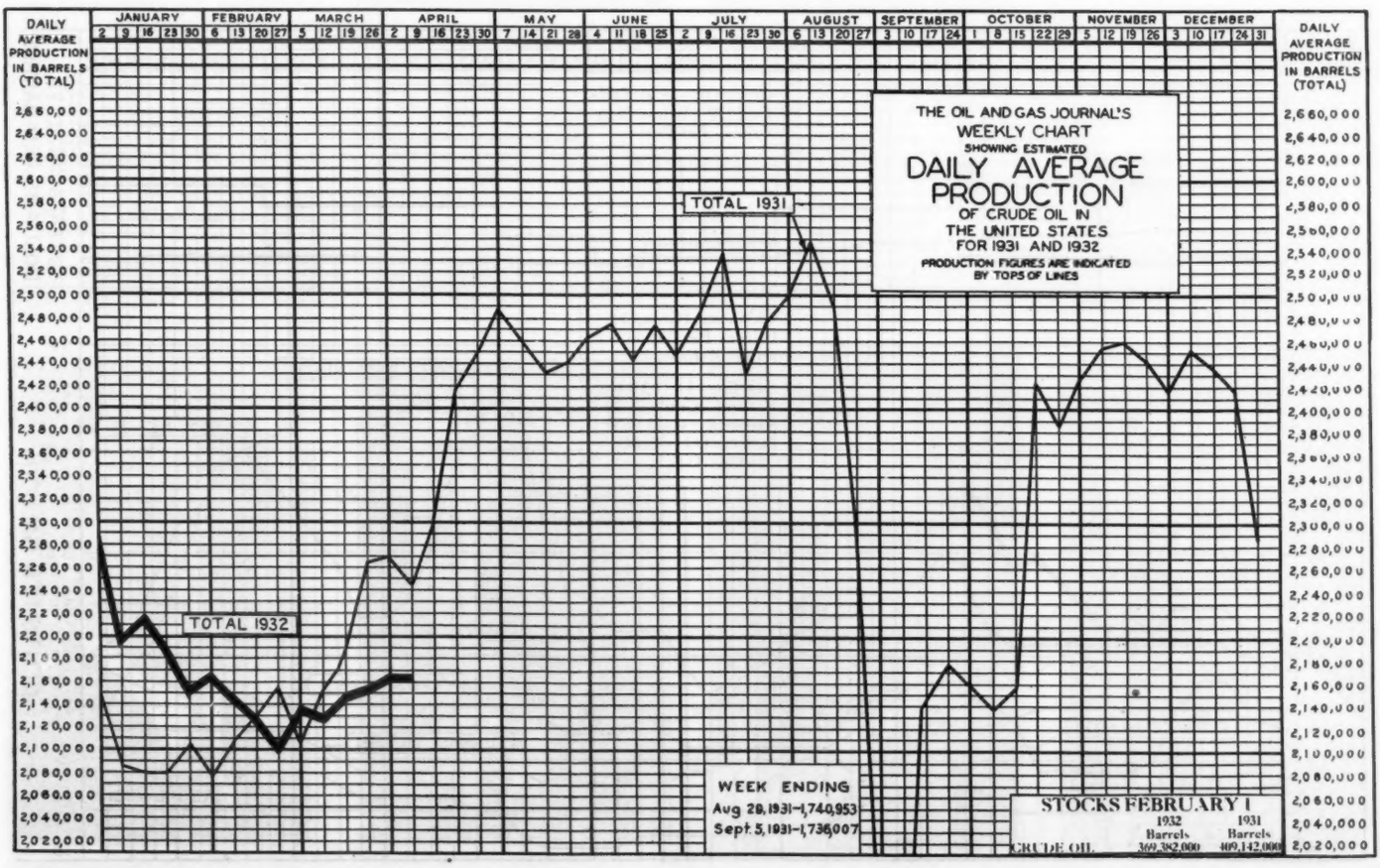
No material change is expected in the output of crude oil in this country within the near future. Changes in allowables in different areas are not regarded as important. In fact, it is generally known some of the recommended allowables represent figures higher than the areas could produce if opened to capacity. East Texas will continue around its present level not only because of proration orders by state authorities but because companies operating there are convinced any substantial increase in production will endanger properties and reduce ultimate recovery.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of crude oil in the United States for the week ending April 2, and a comparison with the previous week follows:

	Apr. 2	Mar. 26
Oklahoma—		
Oklahoma City	83,120	111,765
Seminole-St. Louis	119,425	117,305
Remainder of State	205,070	206,410
Total Oklahoma	407,615	435,420
East Texas—		
Kilgore	103,179	102,159
Lathrop	121,354	119,677
Joiner	106,518	105,910
Total East Texas	331,051	327,746
West Texas	181,735	174,455
North Central Texas	74,152	74,596
Texas Panhandle	47,194	46,748
East Central Texas	55,143	55,260
Gulf Coast Texas	105,387	103,536
Southwest Texas	69,236	59,825
Total	863,898	842,166
Kansas	96,715	98,525
North Louisiana	28,350	27,905
Gulf Coast Louisiana	30,585	28,312
Arkansas	34,900	34,145
Eastern fields	113,000	113,000
Rocky Mountain area	86,142	86,348
California—		
Santa Fe Springs	65,250	65,000
Long Beach	79,500	79,500
Playa Del Rey	19,150	19,250
Elwood	16,500	15,750
Kettleman Hills	63,000	56,750
Remainder of State	254,100	256,750
Total California	497,500	493,000
Total United States	2,158,705	2,158,821

→ Decrease, 116 Bbls. Daily ←



Advance in Refinery Market Continues

Price Increases for Week Include All Major Products in Oklahoma. Specification Kerosene and Tractor Fuel Scarce

By C. O. Willson

The general strength in the Oklahoma (Group 3) and other Mid-Continent markets which became apparent the latter part of March continued with the start of a new month. All the principal products advanced during the past week, the price increases in some cases exceeding those of the previous week.

The strongest product of the week in the spot market was kerosene. So far as the Mid-Continent is concerned, the demand has exceeded the supply starting early in March and since the first of the month buyers have had difficulty in covering their requirements in a rapidly advancing market. Among the buyers of the past week has been a number of refiners. Several operators over the past year have materially reduced their output of this product and in a few cases they have not made a kerosene cut for several months, preferring to purchase from other refiners. The stock situation has shown a steady improvement for the country as a whole although both the domestic and export demand showed a large decline last year.

The Mid-Continent market has shown strength since the first of the year and when the spring demand got under way a month ago many of the trade were surprised to find that the supplies were limited at practically all refineries with several refiners forced to compete with the jobbing trade in making purchases to cover current requirements. The Mid-Continent demand is almost entirely domestic. There has been no important export buying for several months although in normal years there is a steady movement of the product to the Gulf Coast for export and coastwise shipment. A decrease of approximately 30 per cent in the export demand last year enabled coastal refiners to take care of this demand and Mid-Continent buying has been conspicuous by its absence. It was due to this fact that many of the trade felt certain that no price recovery was possible in the product.

The expansion of cracking accounts in part for the decreased supply. A number of refiners are including a part or all of their kerosene and distillate cuts in their cracking stock and cases are cited in which no kerosene is refined due to the desire on the part of refiners to secure the maximum yields of gasoline. This operation is of course dependent on the relative prices received by refiners for gasoline and kerosene and should the latter advance to higher levels most refiners will increase their kerosene yield to take care of the demand.

REFINED MARKET BAROMETER

The tank car market on most of the principal refined products continued to show strength at interior points over the past week. No important changes were effective in California and the East Coast prices for the most part were unchanged. Tank car prices on refinery gasolines in the Middle West and Mid-Continent refining areas advanced rapidly over the week with higher quotations reported in Ohio, inland Pennsylvania and Kentucky. Kerosenes were exceptionally strong in these same areas and price increases also materialized in tractor fuels and furnace oils. A better tone to the market for heavy fuels was reported at several refining centers including coastal points. Gas oils were generally strong. The few price changes announced in cylinder stocks and neutral oils were advances. Petroleum wax unchanged.

Mid-Continent—Refinery gasoline and kerosene prices advanced rapidly. Natural gasolines higher. Fractional advances in furnace oil and gas oils. Industrial fuels stronger in Oklahoma and Kansas. Other products unchanged.

East Coast—Better feeling in regard to refined market. Refinery gasoline firm. No change in kerosene. Advances made in fuel oil and gas oil at several points. Improved domestic demand for wax. Lubricants more active. Routine demand for petrolatum.

Chicago—Refinery gasolines, kerosene, tractor fuel, special naphthas, furnace oils and fuel oils advance. More active demand for most products.

Pennsylvania—Refinery gasoline prices advance. Kerosene stronger. Advance in some grades of cylinder stocks.

Gulf Coast—All refined products stronger. Fuel oil and gas oil quotations advance. Pale and red neutrals stronger in expectation of advance in Gulf Coast crude oils.

California—Better demand for gasoline and fuel oil. Special distillates and kerosene active.

The 41-43 water white grade in Oklahoma was selling over a price range of 3¼ to 3½ cents, the first of the week, the highest quotation in over a year and a half. The 42-44 grade was one-eighth cent higher. These prices are for specification kerosene. Some material which does not meet all the specifications either as to endpoint, color or gravity, was available at a low of 3 cents.

The demand for kerosene has aided in strengthening the market for tractor fuels and furnace oils. Distillates with flash and endpoint that are suitable for tractor fuel, have advanced to a low of 2⅛ cents with sales for the prime white grades as high as 2⅝ cents. The scarcity of kerosene has brought more inquiries for tractor distillates. Furnace oil material is also up one-eighth cent on all grades starting at a low of 2 cents for the 32-36 and 36-38 dark straw of low cold test.

The advances for the week also included the low gravity industrial fuels. A low of 25 cents has been established on the low gravity grades. Any improvement in the demand for these industrial fuels will see additional price advances for there are only a few refiners in Oklahoma and Kansas that have material to offer outside their contracts. To take care of commitments there has been some inter-refinery buying.

Gasoline Situation

The gasoline market is unsettled and will continue in that condition until it is known what view of the crude price is to prevail among the major buyers. At this writing, several of the major purchasers in the Mid-Continent and those

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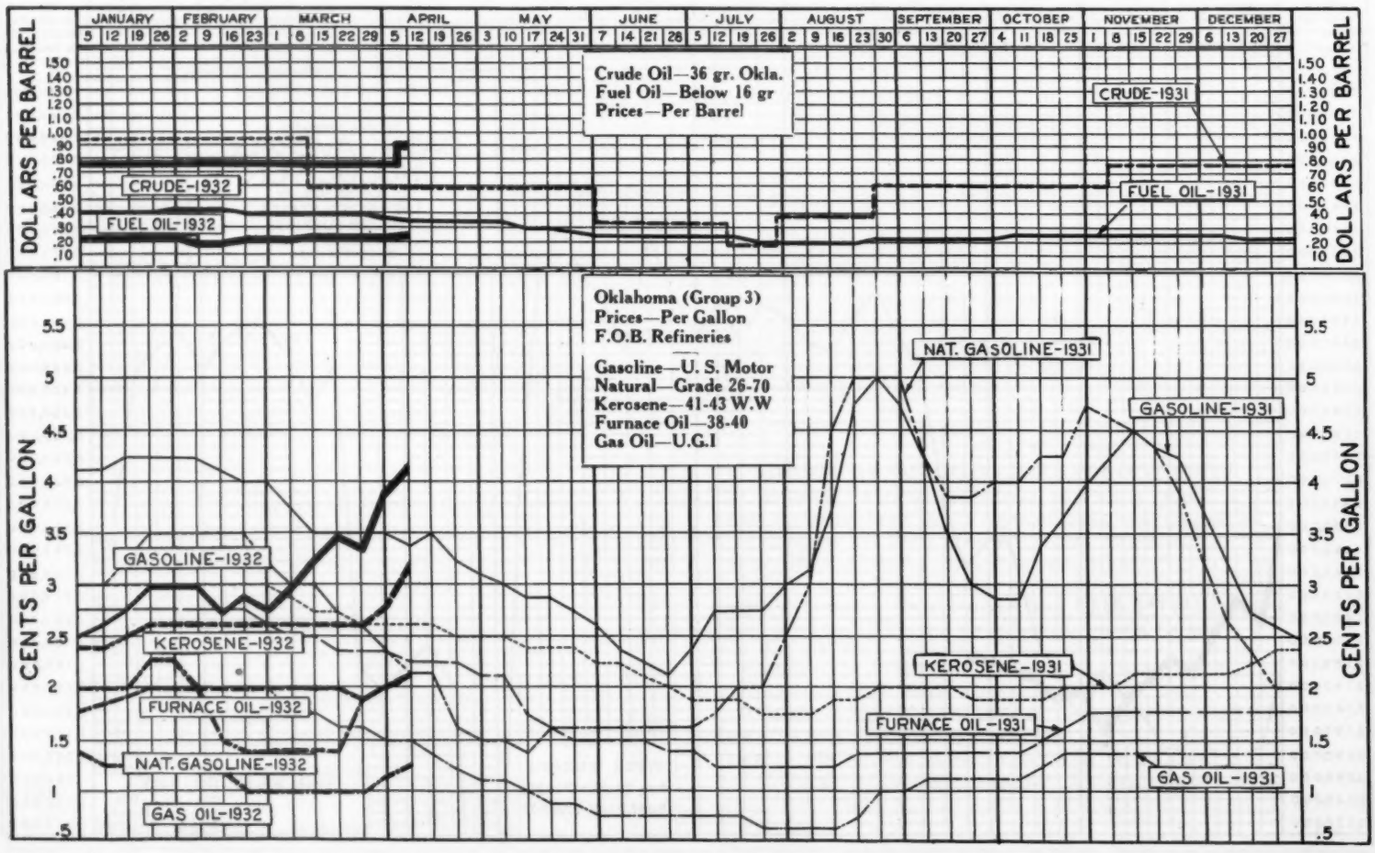


Changes Made in Barnsdall Personnel

Reeser Heads Holding Company. Broomfield Now President Delaware Subsidiary. Management Committee Is Appointed

By Andrew M. Rowley

E. B. Reeser, president of the Barnsdall Corp., has announced important changes in the Barnsdall Oil Co., subsidiary of the Barnsdall Corp., effective as of April 1. Mr. Reeser, who recently was re-elected president of the corporation which is the holding company for various subsidiaries, retires as president of the Barnsdall Oil Co. and is succeeded by R. A. Broomfield, executive vice president of the Barnsdall Corp. and president of the Barnsdall Oil Co. of California. Mr. Reeser retains the position of president of Barnsdall Refineries, Inc.

R. F. MacArthur, vice president and general manager of the Barnsdall Oil Co., retires from the company under the pension retirement plan after a service of 26 years. The duties formerly performed by Mr. MacArthur have been placed in the hands of a management committee which will have the responsibility of operating the Barnsdall Oil Co. W. K. Whiteford, superintendent of production, and D. R. Snow, chief geologist, have been made vice presidents of the company and they, with L. D. Messner, treasurer of the company, will constitute this management committee.

Mr. Reeser will continue to make his headquarters in Tulsa and Mr. Broomfield will remain in California.

The Barnsdall Corp. is an integrated oil company with crude oil production in the Mid-Continent, East Texas and California. It owns a half interest in the Elwood Field in California. Barnsdall Refineries, Inc., a subsidiary, operates refineries at Barnsdall and Okmulgee, Okla., and Wichita, Kans. The Oklahoma refineries are connected with the system of the Great Lakes Pipe Line Co. and Barnsdall is the second largest stockholder and shipper of this gasoline pipe line which extends to Kansas City, Omaha, Des Moines and Chicago. The Oklahoma refineries are complete plants with a capacity of 16,000 bbls. daily.

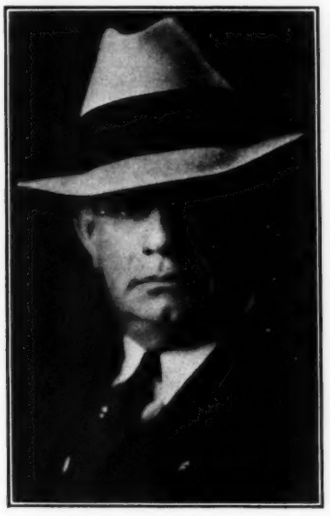
Mr. Broomfield has been president of the Barnsdall Oil Co. of California since 1927 and he was made executive vice president of the Barnsdall Corp. early this year. He has been with the Barnsdall interests since 1903 and prior to his advancement to the presidency of the California company he had been vice president and general manager of the organization 12 years. He entered the oil business with the J. M. Guffey Oil Co., which brought in the Lucus gusher in the Spindletop Field in Texas. He is a director of the American Petroleum Institute and chairman of the production group of the Institute's western division. He served as president of the California Oil and Gas Association and has been active in the California Oil Producers Sales Agency.

MacArthur Began at Bottom

Mr. MacArthur's career in the oil industry began at the bottommost rung of the ladder when at the age of 25 he obtained employment as a laborer for the Carter Oil Co. in 1897. Prior to this he had been educated at Lake Mohegan School, Peekskill, N. Y.; Columbia Grammer School, New York, and Brown University, Providence, R. I., where he took a scientific course. His first work for the Carter Oil Co. was with a shovel, unloading cars of coal and coke in the company's yards in Sistersville, W. Va.

After the Carter had become a subsidiary of the Standard Oil Co. Mr. MacArthur in 1904 was transferred to the South Penn Oil Co., also a Standard subsidiary, as superintendent of its production operations in the Smithville, W. Va., district. Two years later he was put in charge of the South Penn's water and gas department in Mannington, W. Va. In 1906 he was sent to Oklahoma to serve as a field superintendent for the Barnsdall Oil Co., on whose properties at that time the Standard had a lien to protect a loan. He remained with the Barnsdall and following 10 years as field superintendent of the southern half of the Osage territory he was promoted to manager of the company, which position he held up to the time of his retirement.

E. B. Reeser



R. A. Broomfield

Mr. Whiteford was born in Los Angeles, Calif., and attended grade and high school there and graduated from Stanford University in 1923 with the degree of mechanical engineer. He went to work for the Shell Oil Co. of California in the field doing all kinds of work from roughnecking up. In June 1924, Mr. Whiteford started with the Barnsdall Oil Co. of California. His first work was on general assignments in the drilling department. Proving his value in this department, he was called upon to organize the petroleum engineering department for the Barnsdall Oil Co. in California and afterward made chief engineer. He was transferred to Oklahoma in April, 1927, as production superintendent for the northern division of the Barnsdall Oil Co. with headquarters in Tulsa.

Engineering Department

Later Mr. Whiteford organized the petroleum engineering department for the Barnsdall Oil Co. in Oklahoma, Kansas, Texas and the Mid-Continent area, and was placed in charge, with the title of general superintendent of production.

Mr. Snow was born in Fayette, Ohio, and graduated from the University of Chicago in the class of 1916 with a degree of B.S. Having specialized in geology, Mr. Snow went to work in the geological department of the Roxana Petroleum Corp. and remained with them in Tulsa until 1917. Mr. Snow taught geology at the Tulsa Central High School from 1917 to 1920.

In May, 1920, he joined the geological department of the Waite Phillips Oil Co. and was advanced to the position of chief geologist. When Waite Phillips Oil Co. was purchased by the Barnsdall Oil Co. in 1926 Mr. Snow made the transfer and has been with the Barnsdall organization ever since.

Mr. Snow has had the title of manager of the land and geological departments for the Barnsdall Oil Co., with headquarters in Tulsa. This position carried with it the responsibilities of chief geologist as well as head of the land department.

Mr. Messner was born in Pittsburgh, Pa., and attended Pennsylvania State College, taking the academic course, until 1910 when he came to Oklahoma for the Oklahoma Natural Gas Co. Later he returned to the Pittsburgh, Pa., office of the Oklahoma Natural Gas Co.

Upon leaving the bank, Mr. Messner joined the Barnsdall Oil Co. in Pittsburgh as traveling auditor and was working out of the Pittsburgh office from 1914 to 1917 when he entered the air service and was with the American Air Service in the World War.

Returning to the United States in 1919, he again entered the services of the Barnsdall Oil Co. in its New York office and was transferred to the Bartlesville, Okla., office as assistant treasurer. The office was transferred from Bartlesville to Tulsa in 1922, and Mr. Messner was made treasurer of the company in 1926.

R. A. MacArthur

W. K. Whiteford

D. R. Snow

L. D. Messner

Sinclair and Prairie Names Retained

Unofficial Information Places W. L. Connelly, H. L. Phillips, C. H. Kountz and J. R. Manion in High Offices

By James McIntyre

The producing and pipe line units of the Consolidated Oil Corp. are now known as the Sinclair Prairie Oil Co. and the Sinclair Prairie Pipe Line Co. The refining and marketing unit continues as the Sinclair Refining Co.

No official statement as to the officers of the Sinclair Prairie Oil Co. or the Sinclair Prairie Pipe Line Co. has been given out, but it is expected to be made some time this week. It has been freely stated in Tulsa ever since the announcement of the change in names was heard, that William L. Connelly will be chairman of the board of directors; Henry L. Phillips, president and Dana H. Kelsey vice president of the Sinclair Prairie Oil Co. From the same outside sources comes the information that the Sinclair Prairie Pipe Line Co. will be headed by C. H. Kountz as chairman of the board of directors and John R. Manion as president. Messrs. Connelly, Phillips and Manion are Sinclair officials of long standing, and Messrs Kountz and Kelsey have served the Prairie organization in high places for many years.

The announcement of the change in names was received in Tulsa on Thursday, March 31, causing surprise as it had been supposed that neither the Sinclair nor the Prairie names would be used in naming subsidiaries of the Consolidated Oil Corp., which was made up of a combination of the Sinclair Consolidated Oil Corp., the Prairie Oil & Gas Co. and the Prairie Pipe Line Co.

The Prairie Oil & Gas Co. and the Sinclair Oil & Gas Co., the producing units, became the Sinclair Prairie Oil Co.; the Prairie Pipe Line Co. and subsidiary, the Pure Oil Pipe Line Co. of Texas and the Sinclair-Texas Pipe Line Co., became the Sinclair Prairie Pipe Line Co.; the Sinclair Oil Co. of Louisiana became the Sinclair Prairie Oil Co. of Louisiana.

The Sinclair Refining Co., the refining and marketing unit retains its name, as the Prairie was neither a refiner or a refined oil marketer. The Sinclair Refining Co. has been the crude oil marketer of the Sinclair organization since the Sinclair Consolidated Oil Corp. sold its half interest in the Sinclair Crude Oil Purchasing Co. to the Standard Oil Co. of Indiana, but it is thought likely that the Consolidated Oil Corp. will establish a crude oil purchasing unit. As the Prairie Oil & Gas Co. was a large owner of natural gas leases in the Texas Panhandle, a separate gas division may be created to handle this part of the Consolidated's new holdings.

Sinclair's Many Subsidiaries

Just what names will be given to the many other subsidiaries of the Consolidated Oil Corp. has not been made known. The subsidiaries of the old Sinclair Consolidated Oil Corp. and the states or countries in which they were incorporated, were named as follows at the time the merger was agreed upon: Sinclair Oil & Gas Co., Maine; Sinclair Oil Co. of Louisiana, Inc., Louisiana; Sinclair Wyoming Oil Co., Delaware; Repello Oil Co., Wyoming; Consolidated Pipe Line Co., Delaware; Pierce Pipe Line Co., Texas; Sinclair Refining Co. of Louisiana, Inc., Louisiana; Sinclair Building Co., New York; Sinclair Automobile Service Corp., Delaware; Sinclair Exploration Co., Delaware; Consolidated Casualty Insurance Co., Texas; Sinclair Navigation Co., Delaware; Sin-

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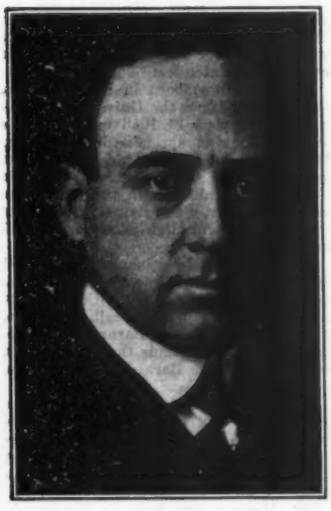

C. H. Kountz

John R. Manion

William L. Connelly

Henry L. Phillips

Azneft Is Developing Deeper Sand

Discoveries in Exploratory Drilling in Old Major Fields Indicate Continued Expansion in Soviet Crude Production. Research Continues

By A. E. Mocker
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 4.—Discovery of new deep producing horizons in Russian oil fields was reflected by considerable exploratory drilling in old pools by Azneft during the past year, according to a report in "Azerbaijanskoy Neftyanoy Hozyaestvo," by K. Riabinin and G. Helkvist. This drilling, it is stated, has conclusively indicated that the three major pools, Lenin Field (Balakhany, Saboonchy and Ramany), the Surakhany Field, and the Bibi-Eibat area, are certain to retain their position for many years to come.

Reviewing drilling operations in the principal Russian fields during 1931, the report shows the following data:

Lenin Field

Exploratory drilling in the lower horizons of the main oil area was barren of results, owing to technical trouble with the wells designed for this specific purpose. Nevertheless, it was definitely ascertained that the lower formations offer great scope for expansion, as everything points to the oil strata extending outwards with increasing depth. Well No. 356, drilled 1 kilometer beyond a point hitherto regarded as the extreme limit of the oil-bearing Kirmak formation, proved to be a gusher with a daily production of 800 tons. A number of wells supplied confirmation of the rich saturation of both the Kirmak and the sub-Kirmak strata; well No. 32,354 yielded 23,650 tons in one month from a depth of 1,069 meters in the Kirmak levels, and No. 32,347 yielded 30,500 tons in one month from a depth of 1,091 meters in the sub-Kirmak strata.

Surakhany

The similarity of the Surakhany deposit to the Balakhany, Saboonchy and Tamany Fields was again revealed in the sixth horizon, a number of wells achieving a production of 500 to 600 tons a day from this level; the sixth horizon is of special interest, as it yields a great deal of heavy oil. Working on data obtained by electrical measurement the division between the fourth and fifth horizons was tapped, and yielded a daily production of 200 to 250 tons. At the present time exploratory drilling is being concentrated on the lower formations, and there is every confidence that they will prove extremely prolific.

Isle of Artem

It is certain that this field, which in the past year produced three times as much as in 1929-30, will continue rapidly to accelerate its rate of production. The sub-Kirmak horizons yielded important outputs (400 to 500 tons a day) and it is probable that they are of great extent. Well No. 69, drilled some considerable distance away from the existing producing field, has a production of about 500 tons a day from a depth of 671 meters in the sub-Kirmak horizons. The amazing constancy of the flow of oil is especially remarkable, due perhaps to the fact that the highest point of the anticline is situated in the north bay of the island and has no well.

Binagadi

The sole object of the exploratory drilling at Binagadi was to define the boundaries of the horizons already being exploited in the lower formations of the main oil area. The results obtained in 1931 pointed to a considerable increase in the saturation of the lower formations in the northeastern part of the Binagadi anticline. Well No. 94, sited far to the east of the producing field, yielded a gushing output of 600 tons a day. This well is of great importance for the Binagadi district, as it was thought that its possibilities had already been fully explored. The data obtained in connection with No. 94, however, considerably enhances the prospects of the field, and gives the means of elaborating new exploratory and productive operations. There was no exploratory drilling in progress in the Shoobany Field.

Bibi-Eibat

The exceptional prolificness of the horizons of the upper formations of the main oil area undoubtedly extends to the lower. Unfortunately, the whole of the lower part has not yet been adequately investigated, although the figures of production from the separate wells are extremely high; well No. 132, for instance, yielded 10,000 tons in 24 hours. On the basis of data obtained from the upper formations there is little ground for the

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Need of More Pools Becoming Apparent

Estimates of Critical Production Show Every Important Field on Decline, Emphasizing That New Reserves Must Be Found

By L. G. E. Bignell,
Petroleum Engineering Editor

Since the production departments of oil companies started to limit the rate of flow from wells in flush areas it has been common practice to estimate oil in reserve and the daily capacity of wells and to refer to such unseen oil as "potential production." Many unknown factors entered into the estimates of well capacity and it has been freely admitted that short test runs did not furnish true criteria. Also the oil remaining underground is difficult to estimate because of lack of much essential data. So "potential production" is a misnomer which not only has led to confusion but at times has created a feeling of false security as to the available oil.

At the A. A. P. G. meeting in Oklahoma City, L. P. Garrett, in his presidential address, introduced a new term, "critical production" which he defined as "the maximum amount of oil that can be produced from a pool or property per day under a systematic program that will give rise to the cheapest lifting cost for all oil in the pool during its lifetime." This seems more nearly to cover the conditions and to give a true picture of available oil from time to time, rather than dealing in "futures" which are difficult to estimate.

It really matters little to the industry as a whole what quantity of oil may be in the ground to be taken out as required, but the refiner should be seriously concerned with the possible rate of production which will be set by economical conditions. The producer is entitled to reasonable profit and to get adequate returns on his investment must aim at maximum yield from his properties. Experience has shown that to get this maximum yield and profit from the oil, controlled rate of production is essential. Equitable taking of oil from the common pool is right and just but can be accomplished by controlled production rate only and to this end proration of flush production has been established.

During the past 18 months it has been possible to produce more oil than current demand would justify bringing to the surface. The various oil-producing states have been allotted their quota of the total demand, and the state bodies controlling property rights of its citizens have divided the allowed volumes of oil among the various pools within the state.

This has been done primarily to insure each owner of oil land his share of the oil within the common pool. This theory of operation is based upon the old laws of property rights. If it were not this way companies who could handle large quantities of oil from the well to storage or refinery would withdraw from the common pool more than their proper share of the oil and gas and thereby acquire their neighbor's property.

Proration Protects Property Rights

The States certainly have the right to protect their citizens from loss of property and to regulate conditions under which oil and gas properties can be operated. In the gas industry it is a recognized practice that only 25 per cent of the estimated capacity of a gas well shall be withdrawn. This ruling seems to be generally accepted by the gas industry and their operations are conducted accordingly.

From work that has been carried on by the engineers in the oil industry it now seems that formulas soon will be prepared that will permit an operator to make accurate estimates of oil reserves. These formulas will be much the same in character as those now used by the gas industry and with definite data on bottom-hole pressures, characteristics of sand, gravity of oil and gas, and other details it seems quite likely that they will be applicable to pools and furnish accurate information as to future available oil.

From the careful check made of oil properties during the period of low price crude much has been learned of their economic value. Companies have adopted policies of abandoning wells that could not be operated at a profit even though in many instances considerable oil was known to be available for future production. This practice therefore has set up standards of "critical production" based upon the common-sense practice of operating only such wells as could be produced at a profit at the market price of the oil.

During 1931 it is known that in five of the oil-producing states as many wells were pulled, plugged and abandoned as there were new wells drilled. A partial list of wells plugged and drilled follows:

State—	Oil wells drilled	Old wells plugged	Difference over	Difference under
Montana	13	112		99
Wyoming	40	9	31	
Colorado	10	6	4	
New Mexico	26	2	24	
Arkansas	19	622		603
Texas	4,410	3,004		1,406
Oklahoma*	498	1,250		752
Total	5,016	5,005		

*Includes wells drilled on Indian lands but does not cover wells on Indian lands that were abandoned.

The foregoing table shows the general trend rather than definite details because state records are not kept in a uniform manner and direct comparison is therefore impossible.

Economic Life of Wells

It does emphasize the fact that oil companies no longer believe in producing a well just as long as it will make oil regardless of lifting costs and this economic practice has been carried still further in that production departments make careful study of individual properties to obtain data on the rate of flow from wells at which the maximum quantity of oil can be recovered within economic limits of cost of production.

This changed condition is placing upon the industry as a whole restrictions other than those placed upon fields by orders of the State Commissions. Their orders are issued to give protection of property rights to all owners within a pool and prevent undue drainage of an area by any one company. The production superintendent's problem is to get the maximum amount of oil from the lease and make a profit. The returns per lease are variable, some never paying out, others just about breaking even, while others make a good earning for the company, so taken as a whole a well operated company will make a justified profit upon its production over the year.

However, at the present price of oil few, if any companies, are able to accumulate appreciable reserves for new operations and the fact that only 6,703 oil wells were drilled in this country in 1931 indicates the great curtailment that has been made in that department of the in-

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Commission Revises Texas Allowable

Gulf Coast to Be Given Special Hearing April 15 and Big Lake on April 13. Total Approximately 860,000 Bbls.

AUSTIN, Tex., Apr. 4.—Allowable oil production in Texas will continue at approximately 860,000 bbls. daily under proration limits agreed to by the railroad commission and carried in new continuing orders which have no expiration dates, saving hearings. The temporary total is 855,000 bbls. This meant no changes from the last proration allowables and it follows the general hearing held on all fields except East Texas, Van and Panhandle, already fixed, and also as to Gulf Coast which is yet to be heard. Panhandle now has a continuing order.

Gulf Coast is to be given a special hearing at Houston on April 15 when the operators in the 40 pools comprising that field are expected to report their allocations of about 110,000 bbls. daily production. With depletions and drilling reduced to a minimum Gulf Coast has dropped from a 140,000-bbl. allowable to 110,000 bbls. under an expired order.

The commission set April 13 at San Angelo to consider the Big Lake Field. At that time the commission will determine the whole field allowable and make an allocation between the two operating companies, the Big Lake and the Texon, the latter a subsidiary of Continental, and will make an especial investigation of gas wastage in that area. A statement was made by the operating companies that they have cut the daily gas waste from 34,000,000 to 24,000,000 feet and that the oil-gas ratio is now entirely reasonable. The commission, however, wants that 24,000,000 feet utilized in some manner and not blown into the air.

New Allowables

Following the hearing the commission made only one change in the daily allowables for the following fields: Southwest Texas, 51,000 bbls.; Yates, 65,000 bbls.; Winkler, 35,000 bbls.; Darst Creek, 18,000 bbls.; Salt Flat, 10,000 bbls.; Ector County, 6,300 bbls.; Howard-Glasscock, 26,000 bbls.; Crane-Upton, 16,700 bbls.; West Central, 30,000 bbls.; and North Texas, 57,000 bbls. To these must be added Gulf Coast, 110,000 bbls.; Van, 50,000 bbls.; Panhandle, 55,000 bbls., and East Texas 325,000 bbls., which are not due for any appreciable change, maintaining the 860,000-bbl. daily allowable for the entire State. Winkler was reduced from 40,000 bbls.

East Texas, with a top allowable of 325,000 bbls. daily, saw its second revision under the recent order and the 72-bbl. per well maximum of the preceding 15 days was cut to 71 bbls. beginning at 7 a.m., April 1. The 71-bbl. allowable is to take care of all producers plus the estimated completions during the first 15 days of April, the grand total of which was fixed at 4,632 wells.

Testimony at Hearing

At the commission's hearing, J. D. Parnell, Wichita Falls, attorney for the Brazos River Gas Co., presented a request that that company be allowed 300 bbls. daily production from its four wells in its Clayton Pool of Jack County. This was opposed by Charles F. Roeser and others, who insisted the pool should be treated as the rest of the West Central Texas Field, and "not given special consideration."

Mr. Parnell said the pool had been producing about 500 bbls., under commission authority, until March, when orders were received to shut it back to a total of 80 bbls. a day to absorb overruns.

W. A. Wise, of Tyler, East Texas operator, complained that some wells in other areas than East Texas were allowed to produce much more oil than any single well in the East Texas Field.

Deputy Supervisor Jack Elliott for the Wichita Falls district, testified there were 14,904 wells in that section; that the area has an allowable of 55,926 bbls., and that, including marginal, nonprorated wells, the average production for February was 49,343 bbls. daily. The field can produce its present allowable without waste, he testified.

Chief Supervisor R. D. Parker reported that approximate numbers of wells in the various fields were: Panhandle, 1,900; North Texas, 15,000; West Central Texas, 8,300; West Texas, 2,880; East Central Texas, 4,600; Southwest Texas, 3,580; East Texas, 4,600; and Gulf Coast 2,200.

For the West Texas district, Deputy Supervisor W. R. Bowden testified there is no waste in the present allowable production.

John R. Suman testified the allowable of the Yates Pool in Pecos County is 65,000 bbls.; that this field has produced 137,000,000 bbls. of oil in four years; that the operators have cut out the waste of 12,000,000 feet of gas a day by reducing the ratio in production of oil, and expect to reduce it by 4,000,000 feet more. He said there are 403 wells, averaging 150 bbls. per day, and that the field can produce up to 95,000 bbls. without waste, but operators want the present allowable limit retained. One well is producing up to 2,700 bbls., he testified in answer to questions by Mr. Wise and Senator Parnell. The field will flow at least 10 years longer, he replied to a question from Chairman C. V. Terrell.

The retiring commissioner, Pat M. Neff, who will assume the presidency of Baylor University soon, was not in the hearing.

Crane-Upton

L. E. Barrows, of The Texas Company, testified concerning the Crane-Upton County Field that it has an allowable of 16,700 bbls., a potential of 50,000 bbls., 610 wells, nearly all of which are pumping. He asked the commission to fix an allowable of 22,000 bbls., taking in some unprorated wells, which would actually reduce the total production somewhat below the present normal production.

Jerry Hines, Wichita Falls, asked the commission to order wider spacing of

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Oxygen Effect on H_2S Gas Corrosion

Laboratory Methods and Results Under Varying Conditions of Corrosion Accelerated by Air in Tanks Handling Sour Oils

By John M. Devine,[1] C. J. Wilhelm[2] and Ludwig Schmidt[3]

This report, dealing with a laboratory investigation of low-temperature hydrogen sulphide corrosion of steel, includes data on the comparative corrosion of steel, under fixed gaseous hydrogen sulphide conditions, for variable percentages of oxygen; data on the comparative corrosion of steel, under fixed gaseous oxygen conditions, for variable percentages of hydrogen sulphide; data on the comparative corrosion of steel, under fixed gaseous oxygen-hydrogen sulphide conditions, for progressive interims of exposure, and discussion of the significance of the laboratory results in their relation to field operations in sour areas.

The laboratory investigation of hydrogen sulphide corrosion is being continued, and other phases of the work will be reported from time to time as the results warrant.

Important Corrosive Factors

In the present investigation of the action of mixtures of oxygen, hydrogen sulphide, water vapor and natural gas upon steel, the following factors were considered of major importance.

1. Percentage of oxygen in the gas.
2. Percentage of hydrogen sulphide in the gas.
3. Duration of exposure of the metal.
4. Humidity of the gas.
5. Temperature of the gas.
6. Pressure of the gas.
7. Rate of flow of the gas.
8. Surface condition of the metal at the start of a test.

Experimental Work

Variation of Oxygen Content of Gas (H_2S Constant)

A series of runs was made with the apparatus maintaining a constant concentration of hydrogen sulphide in the gas of 0.27 per cent (170 grains per 100 cubic feet) and varying the oxygen concentration in the several runs from 0.03 to 22.3 per cent. Each run was of 24 hours duration. The results are given in Table 1.

A next series of runs maintained a constant concentration of 0.07 per cent of hydrogen sulphide in the gas (44 grains per 100 cubic feet) and varied the oxygen concentration from 0.03 per cent to 22.4 per cent. Each run extended for a period of 24 hours. The results are shown in Table 2.

U. R. Evans, in an investigation of the tarnishing of copper in an atmosphere containing hydrogen sulphide, concluded that a high oxygen-hydrogen sulphide ratio usually resulted in less tarnishing than a low ratio because of the preferential formation of an impermeable oxide film rather than a permeable sulphide film. Therefore, assuming that the determining factor in the formation of an oxide film is the presence of oxygen at the surface of the metal in excess to hydrogen sulphide, and considering that both gases must diffuse through an adsorbed moisture film before reaching the surface of the metal, it is apparent that the oxygen-hydrogen sulphide ratio in the moisture film is in reality the controlling factor. Hence, since hydrogen sulphide is approximately 73.5 times as soluble as oxygen in water at 100° F., it would be expected that the oxygen-hydrogen sulphide ratio in the gas must necessarily be in excess of 73.5 before appreciable oxide film could be formed in preference to sulphide film.

Variation of H_2S Content of Gas (Oxygen Constant)

A series of runs was made maintaining a constant oxygen concentration in the gas of 2 per cent and varying the hydrogen sulphide concentration from 0.005 per cent to 0.94 per cent (3-592 grains per 100 cubic feet). Each run was 24 hours long. The results are given in Table 3.

Progression of Corrosion With Time

In many corrosion reactions the time factor is an important consideration because with the progression of the reaction, products are formed which may be deposited on the surface of the metal, and, dependent upon the character of these products, a measure of protection may be given the metal.

In the present study, an effort was made to determine to what extent the corrosion reaction was influenced by the time factor. A series of runs was made, varying the test duration from four hours to three days, and maintaining other test conditions constant and as follows: Hydrogen sulphide content of the gas, 0.27 per cent; oxygen content of the gas, 2 per cent. The results are given in Table 4.

Character of Corrosion Scale

The corrosion scales which were formed in the foregoing experiments presented a lustrous, silvery appearance in the case of low-ratio scales, whereas the high-ratio scales were black and nonmetallic in appearance and had greater density; intermediate-ratio scales were in some instances silvery colored with irregularly distributed black areas. Generally, the high-ratio scales were formed under conditions of a high oxygen-hydrogen sulphide ratio in the gas, and low-ratio scales under the opposite conditions.

By solvent extraction methods, the high-ratio scales were proved to contain from 2 to 4 per cent free sulphur; no free sulphur could be detected in the low-ratio scales. Although, for the purpose of discussion and comparison, the scales have been considered to contain only iron and sulphur, chemical analyses revealed that many of them also contained an appreciable quantity of oxygen, existing probably as iron oxide.

Iron sulphide, resulting as a natural corrosion product in the field, occasionally possesses the property of being spontaneously combustible, or is "pyrophoric." This is generally explained as being caused by rapid oxidation of the sulphide. Nevertheless, since all iron sulphur is not pyrophoric, it appears that the scale must be formed under a rather definite set of conditions before a pyrophoric material is produced. Mellor observed that if ferrous sulphide be strongly compressed and subsequently exposed to moist air, it becomes pyrophoric. Weyman believed that pyrophoric iron sulphide is of the composition, Fe_2S_3. Pearson and Robinson considered all iron sulphides to be readily oxidizable, but usually not pyrophoric unless extracted with carbon disulphide, which removed the thin film of free sulphur that protected the sulphide particle from oxidation.

The corrosion scales, produced in the course of the present investigation, were inspected for pyrophoric properties. None of the scales proved to be pyrophoric, even when previous extracted with carbon disulphide and placed in a stream of pure oxygen.

TABLE 1—EFFECT ON CORROSION OF VARYING OXYGEN CONCENTRATIONS, AT A CONSTANT H_2S CONCENTRATION OF 0.27 PER CENT

Run number—	Oxygen, per cent	Weight of scale, grams per sq. ft.	Loss of metal, grams per sq. ft.	Ratio, weight of scale; loss of metal
24	0.03	0.043	0.030	1.43
16	.49	.094	.057	1.65
22	1.00	.294	.183	1.61
12	1.72	.318	.197	1.61
13	2.24	.921	.590	1.56
23	2.28	.722	.445	1.62
19	3.92	1.195	.738	1.62
21	5.37	1.220	.745	1.64
5	5.85	1.530	.910	1.68
27	6.50	1.350	.770	1.76
25	8.64	1.570	.855	1.84
11	10.90	1.820	.975	1.87
7	15.15	2.060	1.070	1.92
10	22.30	2.370	1.300	1.82

TABLE 2—EFFECT ON CORROSION OF VARYING OXYGEN CONCENTRATIONS, AT A CONSTANT H_2S CONCENTRATION OF 0.07 PER CENT

Run number—	Oxygen, per cent	Weight of scale, grams per sq. ft.	Loss of metal, grams per sq. ft.	Ratio, weight of scale; loss of metal
40	0.03	0.032	0.014	2.33
39	.96	.661	.408	1.62
33	2.34	1.100	.685	1.61
31	3.16	1.390	.815	1.71
32	5.20	1.830	1.058	1.73
34	7.28	2.015	1.115	1.81
35	9.02	1.670	.910	1.84
37	10.50	1.640	.945	1.74
30	14.00	1.770	1.080	1.64
36	14.15	1.680	.930	1.81
38	16.00	1.510	.895	1.69
29	22.40	1.370	.726	1.89

TABLE 3—EFFECT ON CORROSION OF VARYING H_2S CONCENTRATIONS, AT A CONSTANT OXYGEN CONCENTRATION OF 2 PER CENT

Run number—	H_2S per cent	Weight of scale, grams per sq. ft.	Loss of metal, grams per sq. ft.	Ratio, weight of scale; loss of metal
51	0.005	0.001	0.000	...
46	.019	.160	.094	1.70
41	.057	1.040	.610	1.71
33	.083	1.100	.685	1.61
42	.108	.920	.565	1.63
23	.254	.720	.445	1.62
13	.292	.920	.588	1.56
43	.456	.690	.421	1.64
44	.623	.570	.352	1.62
45	.940	.051	0.18	2.80

TABLE 4—PROGRESSION OF CORROSION WITH TIME, AT CONSTANT CONCENTRATIONS OF OXYGEN AND HYDROGEN SULPHIDE

Run number—	Duration of test, days	Weight of scale, grams per sq. ft.	Loss of metal, grams per sq. ft.	Ratio, weight of scale; loss of metal
49	0.167	0.112	0.046	2.44
52	.417	.236	.123	1.84
47	.667	.400	.252	1.59
13	1.000	.920	.589	1.56
23	1.000	.721	.445	1.62
50	2.000	1.030	.630	1.63
53	3.000	2.063	1.265	1.63

Discussion of Experimental Work

The following tentative conclusions regarding gaseous-hydrogen sulphide corrosion, under the conditions studied, have been drawn from the foregoing laboratory investigation.

1. The conclusions of Lilienfield and White regarding silver and of Roberts regarding mercury also apply to iron; that is, the presence of oxygen is necessary before the attack by hydrogen sulphide is appreciable in extent.

2. The apparent controlling factor in the corrosion reaction is the ratio of the oxygen concentration in the gas to the hydrogen sulphide concentration in the gas.

3. Since an oxygen-hydrogen sulphide ratio of approximately 114 produces the maximum corrosion, it follows that gases containing relatively small amounts of hydrogen sulphide can produce more corrosion when oxygen is present in small amounts than can gases containing a relatively high percentage of hydrogen sulphide.

4. However, hydrogen sulphide must be present to at least 0.025 per cent (16 grains per 100 cubic feet) before the normal, serious corrosion results. Of course, as shown by Hicks, in the absolute absence of hydrogen sulphide, a gas containing oxygen will cause a small amount of corrosion.

5. Corrosion proceeds approximately in proportion with the time.

6. The corrosion was evenly distributed over the test specimen; in some cases, however, there was a definite indication that pitting had started.

Gaseous Hydrogen Sulphide Corrosion in the Field

Gaseous hydrogen sulphide corrosion, under conditions which are similar to the laboratory conditions maintained in the present investigation, is often encountered in fields producing sour oil and gas. Examples of such corrosion include corrosion in the vapor space of tanks, corrosion of tubing and casing in the annular space of pumping wells, and interior corrosion of gas lines. Other types of hydrogen sulphide corrosion exist in which the corrosive conditions are further complicated by the presence of salt water, resulting in "submerged liquid corrosion"; results in the present investigation are not meant to be applied to such corrosion.

Corrosion of Tanks in Vapor Space

Although failure of top sheets is probably not the principal type of failure in lease tankage, there are many cases in which top sheets have been replaced because of hydrogen sulphide corrosion. An added disadvantage of top sheet corrosion has been mentioned by Ginter in that scale formed on the underside of top sheets will become loosened and deposited within the tank, thus causing accelerated corrosion of the bottom and side sheets because of the cathodic character of the side.

The presence of oxygen in lease tanks is attributable to two causes. First, through natural breathing of the tank, air may be drawn into the tank. However, the second and chief cause is the emptying of a full tank of oil into the pipe line. In this case, the oil in the tank is replaced by an equal volume of air; thus a high percentage of oxygen may exist in the tank for a considerable period of time after the "run." As mentioned in a previous publication, remedial measures for elimination of such oxygen can be taken by installing a system of overhead gas lines, by which means gas instead of air is utilized to replace oil when a "run" is made to the pipe line.

In fields where the gas production is

(Continued on Page 86)

[1]Associate petroleum engineer, [2]junior engineer, [3]petroleum engineer, all of U. S. Bureau of Mines, Bartlesville, Okla. Reprinted from U. S. Bureau of Mines Report of Investigations 3,160.

Jo Cappeau's First Oil Job Was Risky

Served as Scout in Audacious Eighties, When It Meant Outwitting Guards and Taking a Chance of Being Peppered With Lead

By Thomas F. Smiley

Jo P. Cappeau is one of three men now living who made up the little band of original oil scouts in the early Pennsylvania fields. There were scarcely a dozen of them. "Night riders of the hemlocks" they have been called, and the name conveys something of the romance which tinged the life of these pioneers in a calling which demanded resourcefulness, alertness and readiness to face hardship and danger. There were no automobiles, no smoothly paved and clearly marked highways. Roads, if any, were of dirt. Saddle horses carried the scouts about the fields and when a man had made 30 or 40 miles he usually had done a hard day's work.

The late J. C. Tennent in his interesting book, "The Oil Scouts," named 28 men as the recognized scouts of the period from 1882 to 1885. Mr. Cappeau himself enumerates 13 as making up the group at the time of the Cherry Grove and Balltown developments in 1882. Volunteers and irregulars swelled the list from time to time.

Of those named by Mr. Cappeau and Mr. Tennent the only survivors besides Mr. Cappeau are believed to be William Edwards and George H. Torrey. Billy Edwards, who represented Clark & Foster, early Pennsylvania operators, later was superintendent for the South Penn Oil Co. Then he acquired some good leases and became well-to-do. He resides in Pittsburgh, Pa. George Torrey was employed as a scout by T. J. Vandergrift, pioneer oil operator. He resides in Oil City, where he looks after oil interests. James Briody went to contracting when he quit scouting and he died early this year in Tulsa.

Mr. Cappeau is insistent on omission of the "e" in the shortened form of his Christian name. Adoption of the spelling "Jo" instead of the customary "Joe" came about through an early excursion into the field of telegraphy. After going as far as the schools of Oil City, where he had spent most of his boyhood, could take him Jo at the age of 17 went to work in a cigar store there, making himself generally useful or otherwise as circumstances determined. At the end of a year or so he got a job in the office of the Atlantic & Pacific Telegraph Co., which operated a line between Oil City and Cleveland, Ohio. Although employed as a counter clerk, Jo practiced with the telegraph key and soon became fairly adept at sending and receiving the Morse alphabet. Henry Ossenbeck, father of Fred J. Ossenbeck, Mid-Continent wildcatter of Tulsa, was employed at that time under Dan O'Day in Oil City and he occupied a room in the third story of the same building that housed the telegraph office. The two set up a private wire running from the room where Jo worked to his friend's room higher up and they spent much time exchanging messages.

And "Jo" It Remained

Like all telegraph operators, each had his signature. Young Cappeau's was — . — . . . which is Morse for J. O. Throughout his later work as an oil scout he had occasion to send hundreds of telegrams, and these were signed in the same way. So "Jo" it became for all time. If you were to speak of Joseph Cappeau, even his intimate friends would look inquiringly at you.

For two years Jo remained with the Atlantic & Pacific, and he considered following the telegraph key permanently. He asked John H. Dixon, manager of the Oil City office, what he thought about it. "Oh, hell, don't do it," was the forceful admonition. "I've been at it 18 years and this is as far as I've got."

So Jo abandoned the idea of becoming a professional telegraph operator and let it be known to Vandergrift, Young & Co., an oil producing organization in Oil City, that his services were available. They were accepted without clamor and Jo was set to work carrying messages and keeping an extremely simple set of books, but he was by way of getting into a growing industry.

In the meantime the Bradford Field had been opened and there was much wildcatting in outlying areas. By this time too a fair start had been made by oil exchange speculators in the art of tricking fellow gamblers. Various were the devices employed. Misleading rumors concerning new wells were a common form of hoodwinking the public. From this it was a short step to the "mystery well," the usual purpose of which was either to energize a sluggish market and to boost or depress prices or to enable the owners of the well to lease nearby land more advantageously. Many of the major oil exchange speculators were also producers, and by concealing the facts about new wells they at times were able to "rig the market" and make a cleanup.

Assembled First at the Dewdrop

One of the first attempts to mystify a well for speculative ends was that of Dr. Van Scoy and Samuel Scowden, who in 1880 threw a cloak of secrecy about their "Dewdrop" well on Kinzua Creek, in Warren County, Pennsylvania. For their own protection some of the leading oil interests already had employed men to keep an eye on new operations and report daily. These watchers, who had not yet come to be called scouts, foregathered for the first time at the Dewdrop. W. J. Young, of Vandergrift, Young & Co., decided the organization should have somebody on the ground. He delegated Jo, and that young man, who had been waiting for just such an opportunity, set out for Kinzua, tingling with the prospect of adventure.

S. B. (Si) Hughes, personal representative of Daniel Goettel, active floor trader on the Oil City exchange, was there. So was Ben Tupper, representing L. H. Smith, president of the Consolidated Exchange, New York. P. C. Boyle, who later was to be publisher of the Oil City Derrick, represented Titusville and Oil City newspapers. Harry Beam, Jim Giles, Tom E. Kern, Frank H. Taylor and J. C. McMullen were others. Jo Cappeau was the youngest of the group, but his familiarity with the telegrapher's dots and dashes made him peculiarly valuable. Jo was posted at the window of the telegraph office in Kinzua. There he listened to the tick-tick of the sounder and unostentatiously took incoming and outgoing messages. All the watchers compared notes at the end of each day, exchanged information and then reported in cipher to their principals.

The depth of the Dewdrop and the quality of the oil were the particular points concerning which facts were sought, and the owners made sedulous efforts to keep the public from finding out anything.

Where "Black Tom" Helped

Armed guards were at the well night and day to keep scouts from gaining access to the derrick. Some of the scouts watched hotels and livery stables, taking note of all who came or went. The siege continued for weeks. It was P. C. Boyle who eventually outmaneuvered the vigilant well owners. Mr. Boyle's first step was to engage Thomas McKeown, a well-known driller, as an aide and bodyguard. Because of his black whiskers, muscular physique and generally fierce aspect, McKeown was known as "Black Tom." Under cover of darkness the two managed to crawl unseen to the derrick, where they obtained a sample of oil from the casinghead. By counting the coils of rope on the bullwheel shaft they arrived at a close estimate of the well's depth.

The color and gravity of the oil indicated it was of Clarendon and Bradford second-sand quality. The depth of the hole tallied with the location of Bradford's second sand and where the Clarendon sand would be expected. With this information in hand the Dewdrop mystery was a mystery no longer and all the scouts quietly left Kinzua. It had been feared the Dewdrop would be a gusher, with a consequent tumbling of oil prices. Actually the well proved to be a small producer, but the important thing was that the reports of the scouts to their chiefs ended uncertainty and nervousness and prevented a demoralized market. The very presence of the scouts at the well had exercised a steadying influence.

Jo Cappeau was a messenger boy no longer. He had become an oil scout.

It was Jo Cappeau's fortune to be at No. 646, famous mystery well in the Cherry Grove development of 1882 in Warren County. This well, a wildcat drilled by Grace & Dimick south of the Clarendon Pool, opened up a new white sand field which within four months had a production of 40,000 bbls. a day, a stupendous record for that time.

The 646, started in January, was shut down March 10 and boarded up. A guard was stationed and the Cherry Grove excitement began with this action. It was realized that 646 held the fate of prospective oil land to the southwest of the proven Clarendon area. A battle of wits between the scouts and the owners of the well began. Four miles to the northeast was the big Cornen gas well, which had found gas in a new sand. It was suspected Grace & Dimick had struck oil in this same sand, and this suspicion later proved true. The owners wanted to get leases on adjacent property before the facts concerning their strike became known generally.

That oil had been found when the sand was penetrated was indicated by the fact that the owners built an 800-bbl. tank and a tankhouse, the well in the meantime being shut in at the casinghead. On the day the well was drilled in Si Hughes managed to keep close enough to the tankhouse to hear the oil running into the tank and thus to time the flows, gaining a rough estimate of the well's production. He and Jo Cappeau then laid plans for obtaining a closer estimate. A corner of one of the hemlock boards used in building a side of the tankhouse had split off at the bottom, leaving a narrow triangular opening through which Jo, slender and wiry, decided he would be able to wriggle.

Through a Tight Hole and Out Again

The conspirators agreed to meet that night and together try to gauge the tank after having ascertained from a friendly workman the depth of the oil in the tank

(Continued on Page 75)

DAREDEVIL OF '82 AND HIS SUCCESSOR

Half a century has glided into history since that audacious period when the oil scout was primarily a daredevil adjunct to a gambling phase of petroleum. The scout of today, aptly termed "the eyes of the oil industry," is as firmly established as the geologist or the petroleum engineer. He has a bigger place in the actual business of oil production than did his prototype of 1882. He performs an immensely useful task; but it is a dignified, businesslike sort of task, ordinarily quite matter-of-fact. It contributes to the smooth and efficient operation of the production department, not to the rise or fall of a speculator's fortunes. Therein lies the essential difference between the scout of today and the scout of yesterday.

Jo P. Cappeau

Pipe line certificates representing oil held in storage were the medium of feverish speculation in the old-time oil exchanges of Oil City and Bradford, Pa., New York and other cities. Gambling in these certificates reached its height in 1882 to 1884, and it was in this period that the most colorful pages of oil scout history were written. Brokers and small-time speculators watched avidly for signs of rise or fall in the price of oil as fixed by trading in the certificates. A gusher could break the market. A dry hole could send prices soaring. Thus it was that the speculator who was first to get accurate information from important drilling wells was the one most likely to succeed in his oil exchange operations. In order to get such information scouts were employed by major speculators. And it was as a scout in those vivid, volatile days that Jo Cappeau entered the oil business.

Changing Concepts in the Oil Industry

Proper Appreciation of Function of Gas Makes for Reserves in the Ground Rather Than Costly Aboveground Storage

By J. B. Umpleby
Petroleum Engineer, Norman, Okla.*

The function of gas in the development and production of oil has far reaching consequences that should be emphasized. The technical aspects of the subject have recently had a great deal of attention but less thought has been given to fundamental concepts underlying oil and gas law and the many customs and practices that have grown up in the industry. I shall review briefly the advance in knowledge of the subject and attempt to relate these concepts to legislative, judicial and operating problems.

Early writers on oil and gas in Pennsylvania noted their close association in oil pools and their contemporaneous decline in output; also, that as gas pressure decreases so does production, that new offset wells reduce the output of existing wells, and even that tubing a well lengthens its flowing life. Expanding gas was deduced as the principal expulsive force. These fundamental observations had been made at least as early as 1880[1]. They were treated, however, as academic considerations and did not greatly influence law or practice for many years except to instill into all operators an urgent desire to hasten offset drilling in order to obtain as much of the flush as possible.

Advance in 1926

The most noteworthy later advance in knowledge came in 1926 when Beecher and Parkhurst published their paper on "Effects of Dissolved Gas Upon the Viscosity and Surface Tension of Oil."[2] This paper added to the old idea of an expelling force the concept of a modifying agent that actually changes the physical characteristics of the oil and facilitates its movement through the pore spaces of the reservoir rock. Largely since the publication of this paper, intensive study and concerted effort have been given to means of using to a maximum, in producing oil, these combined properties of gas. This is shown clearly by the number of papers dealing with the subject, and the new and revived terms now widely used to express thought, such as the expressions gas energy, reservoir pressure, reservoir energy, gas-oil ratio, bottom-hole pressure, beaning, tapered tubing and back pressure. These terms, some of which are old but with new adaptations and significance, have come into the literature extensively within the last few years.

A review of the annual volumes of the Petroleum Division of the Institute shows production-engineering papers discussing this general subject as in Table 1.

During this period also, American universities introduced special courses in petroleum production engineering and the engineer came to be widely accepted by the producing branch of the industry. His advent accompanied and stimulated a rapidly increasing interest in the greater utilization of gas energy as a means of increasing the extraction of oil and lowering production costs. In 1927 the American Petroleum Institute undertook the collection of data on the function of gas in the production of oil. The remarkable part of the study to those engaged in it was the extent to which engineers experienced in widely separated fields agreed on fundamental principles even though the observations had not been recorded previously. The study revealed existing agreement even though it did not bring to light much new data, and it convinced the industry of the importance of the energy and physical relationships of gas to the production of oil. This study was the primary point of departure for fundamental changes in thought and practice. The final summary of data comprises an exhaustive report by the U. S. Bureau of Mines in cooperation with the Institute[3]. Immediately much was heard of gas-oil ratios, back pressure, devices for determining reservoir pressure, etc., with the result that

(Continued on Page 84)

*Presented at New York meeting, Petroleum Division, A.I.M.E.

[1]J. F. Carll: The Geology of the Oil Regions of Warren, Venango, Clarion and Butler Counties. Second Geol. Survey Pennsylvania, 3, 1880.

[2]C. E. Beecher and I. P. Parkhurst: The Oil and Gas Journal, Oct. 21, 1926.

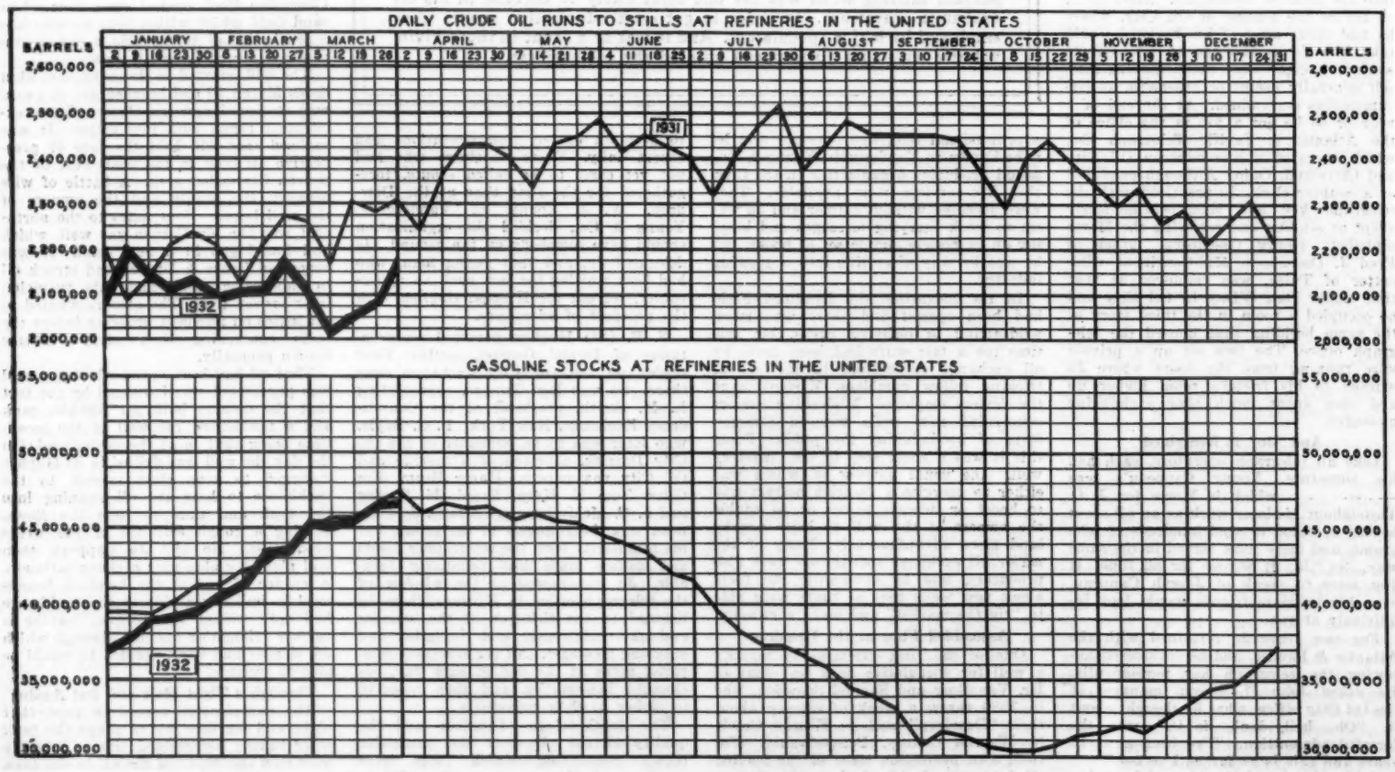
[3]H. C. Miller: Function of Natural Gas in the Production of Oil.

AMERICAN PETROLEUM INSTITUTE WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to still, gasoline stocks and gas and fuel oil stocks in barrels—for the week ending April 2:

	Week ending April 2, 1932				Week ending March 26				Week ending March 28, 1931			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
East Coast	100.0	428,900	7,015,000	5,848,000	100.0	445,400	6,630,000	5,705,000	100.0	476,400	8,690,000	7,244,000
Appalachian	91.8	89,700	1,853,000	1,114,000	91.3	92,000	1,859,000	1,148,000	93.8	93,400	1,766,000	1,107,000
Indiana, Illinois, Kentucky	98.9	316,700	6,510,000	4,040,000	98.9	303,700	6,369,000	3,980,000	97.5	297,900	5,743,000	3,052,000
Oklahoma, Kansas, Missouri	89.6	214,100	3,953,000	2,986,000	89.6	233,300	4,033,000	2,970,000	89.4	257,900	3,468,000	3,727,000
Texas	91.3	499,400	8,764,000	8,700,000	91.3	452,900	9,194,000	9,011,000	91.9	549,400	8,038,000	8,096,000
Louisiana and Arkansas	98.9	159,600	1,901,000	4,287,000	98.9	145,900	1,833,000	4,278,000	98.3	148,400	1,994,000	2,254,000
Rocky Mountain	89.4	30,300	2,027,000	637,000	89.4	33,700	2,049,000	638,000	93.1	48,600	1,893,000	829,000
California	96.7	449,300	14,491,000	96,498,000	97.1	469,100	14,709,000	96,443,000	98.8	461,300	15,802,000	100,929,000
Total United States	95.1	2,198,000	46,519,000	124,110,000	95.2	2,176,000	46,726,000	124,173,000	95.7	2,332,400	47,444,000	127,268,000
Texas Gulf Coast	99.8	483,600	7,195,000	6,088,000	99.8	360,600	7,504,000	6,355,000	100.0	417,300	6,950,000	5,791,000
Louisiana Gulf Coast	100.0	116,700	1,778,000	3,627,000	100.0	106,400	1,697,000	3,624,000	100.0	100,900	1,805,000	1,213,000

(1) Per cent refinery capacity represented. (2) Daily crude runs to stills. (3) Gasoline stocks. (4) gas and fuel oil stocks.



All data based on weekly reports of the American Petroleum Institute. Figures for last week not shown in graph but are included in above table.

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THE BIGGEST OBSTACLE

Congress is the biggest obstacle to the return of prosperity. No one knows what to expect from it and, fearing the worst, hesitates to plan a day ahead.

It is a measure of how far the House has sunk in public respect when the Senate is looked to to save the situation.

Perhaps, after all, the Fathers were wise and the Senate may yet prove the cooling saucer for the overheated legislation of the House. Anyway, it seems to be the only hope.

For a time it was even doubted if the House could be made to recognize the necessity of balancing the national budget but it finally penetrated.

That, however, seems to be about as far as it got. When it came to deciding how the necessary taxes should be levied the House had about as many notions as any other 435 citizens who had never given the incidence of taxation a thought.

The close party division and the breaking up of partisan lines deprived the leaders of authority and the rank and file of guidance. The House had become a sort of Donnybrook fair where the only rule was "wherever you see a head, hit it!"

The sensible proposal for a manufacturers' sales tax was immediately made a target, assailed, mistakenly as it was, by manufacturing interests which blindly fought it because it affected them, heedless of the fact that new taxes must be raised and if they did not pay it one way they must in another.

The oil industry, which is paying over a half billion dollars a year in sales taxes on gasoline, should have got vigorously behind the sales tax. The American Petroleum Institute did, indeed, urge it before the House committee but the bulk of the industry was indifferent.

Now, as a result of the defeat of the manufacturers' sales tax the House bill, instead of levying a general tax, is picking out selected industries and commodities to bear the burden that should have been borne by all and the oil business is one of the chief sufferers.

Leaving aside the tax of a cent a gallon on imported oil and gasoline, which must fail either as a tariff or as a revenue measure, since it must be imported to obtain revenue or, if shut out, cannot help the treasury, all lubricating oil is to be taxed four cents a gallon and an eight per cent levy is imposed upon transportation in pipe lines.

Every oil man will see at once that these imposts on lubricating oil and pipe line transportation cannot be passed on to the consumer but must come out of the revenues of the oil companies, already sadly depleted.

The three per cent tax on automobiles is another section that will react on the oil business by discouraging car purchases.

In fact, the whole effect of the bill as passed by the House will be to discourage rather than to assist business and industry in getting out of the present rut.

Since the tax must be raised the more general and equitable it could be made the easier it would be borne. Congress, instead, has piled the burden on a few and passed over the rest.

Commodity prices have dropped far below normal. The two and a quarter per cent manufacturers' tax distributed generally would not have been materially felt by consumers in view of present prices. In fact, the stiffening of prices that would have resulted might have had a beneficial effect in steadying the price situation.

The cost of collection would have been simplified, compared to the wasted labor in singling out nuisance taxes, and there would have been infinitely less grumbling and resentment than has been aroused by the proposals in the House bill.

With a manufacturers' sales tax the ordinary retail buyer would have been relatively undisturbed. With the levies passed by the House every man and woman buyer will be continually reminded of the crassness of Congress by a return to unnecessary nuisance taxes, patiently endured during the war as a matter of patriotism, but certain to be resented as proof of the stupidity of Congress.

If the House bill ever becomes law House members will find it a continuous argument against their re-election.

As a matter of politics it is difficult to imagine a more inept list of irritations than the nuisance taxes passed by the House. We have heard a lot about the woman vote but have so far failed to distinguish it in the general results. Perhaps this Congress is going to be enlightened by the result of its tax on cosmetics, on furs, jewelry, candy, chewing gum and that additional cent on postage.

These are but a few of the perpetual annoyances everybody will suffer when the new levies on telegrams and telephone conversations, beverages, amusements and even matches, plague us daily.

And it was for these nuisances that the House voted down the manufacturers' sales tax which at least would not have bumped into us every time we turned around.

Looking back at those days when the House was mobbing the sales tax the conclusion is irresistible that it was defeated not because it was a sales tax—how about all these new nuisance sales taxes—but because the House was simply panic stricken by the necessity for raising new taxes in a presidential year. The first impulse was to vote it down—hence the doubt whether the House really understood that the budget had to be balanced.

Then, when it was seen the money had to be raised somehow all these other piecemeal taxes were dug up and the result was called a revenue bill.

The Senate, justly or unjustly, has been greatly criticized of late years as trying to be the whole government but it has a chance to earn the confidence of the country in amending this bill sent up by the House.

As it stands the House bill is a boomerang politically; regardless of party it is reacting on everyone concerned in it. The universal comment on the street is one of consternation and resentment.

Oil men, directly interested in the provisions burdening their own business, should make themselves heard at Washington at once. The members of the Senate Finance Committee, which will consider the bill are listed on page 76 of this issue under the vigorous appeal of W. R. Boyd Jr. for immediate action.

Every reader of The Oil and Gas Journal should interest himself immediately.

From Kentucky to the Eastern Markets

ANOTHER major natural gas project — the Columbia line—Dresser coupled. This line, largest in the east, extends from the gas fields in Kentucky to Coatesville, Pa., a distance of approximately 467 miles, where it joins with other lines of the system to serve the great industrial and domestic markets along the Atlantic seaboard.

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Industrial Uses for Liquefied Gases

Butane and Similar Petroleum Products Ideal Fuels for Heat Treating. Consumption Increased in 1931

By G. R. Benz
Industrial Gas Division, Philgas Company*

Direct large scale usage of G-4[1] butane as a plant gas service is a recent development in the field of industrial heating, the initial application having been made in 1927 in a prominent Detroit automobile manufacturer's plant. All of you, and especially those of you who attended the automobile show may be interested in the role G-4 butane has played in this year's new models. Now practically every car and truck rolling from the assembly line in automobile plants in the United States or Canada has had butane used in one or more process heating operations. G-4 butane gas is the fuel in 34 large assembly and accessory manufacturing plants.

G-4 butane, however, is not confined to the automotive industry, for its desirable characteristics are very advantageous to other industries, as will be pointed out in detail later on in this paper.

G-4 butane gas is especially adapted to those heating operations requiring accurate control of temperature and atmosphere—due to its exceptional uniformity it provides a fuel gas of constant gravity, thermal value and pressure. Further, G-4 butane, being free from sulphur compounds, tars, gums, resins or other contaminations, is of especial value for heating operations requiring a sulphur free furnace atmosphere. To minimise scaling, the atmosphere in heat treating, forging and bright annealing furnaces should be as free from sulphur as possible[2].

In the average commercial forge shop, the billet heating furnaces are usually box or slot affairs, generally without insulation and poorly constructed. The fuel, except where cheap natural or refinery gas is available, is either oil or powdered coal. Fuel oil is an excellent billet heating fuel because of the high temperature obtainable, resulting in rapid heating of the billets with a minimum of scale. It has been found that steel in sizes up to 4 inches may be heated from shop temperatures to the desired forging temperature at any rate, without establishing injurious temperature gradients.

Fuel oil has several objections as a forging fuel; namely:

The high sulphur content causes excessive scaling.

Oil fired billet heating furnaces do not lend themselves easily to automatic temperature control.

During periods of shutdown due to hammer, press and die troubles, excessive scaling and burned stock usually results.

Oil is troublesome to handle and requires recirculating and preheating for satisfactory distribution.

Due to the type of oil generally used for forging, large losses occur from sludge and sediment in the storage tanks. Tanks also require frequent cleaning.

Oil fired forge furnaces have high refractory maintenance and replacement costs.

Smoky and dirty working conditions exist.

G-4 butane offers an excellent fuel to be used with "radiant" and "diffusion" flame burners on forging and other high temperature heating operations because of the high percentage of carbon present in the molecule as compared to city gas and natural gas. Butane (C_4H_{10}) contains about 83 per cent carbon (by weight), while natural gas (considered as methane) only 75 per cent carbon. The reaction in this type of flame is the preliminary breaking down or cracking of the gas to free carbon and other hydrocarbon gases. The free carbon becomes incandescent before the combustion reaction is entirely completed, thus providing a radiant flame from which the heat is transferred by radiation directly to the stock, giving equally as rapid, if not more rapid, heating up than is possible with the use of fuel oil. Several commercial applications using G-4 butane for forging with "radiant" and "diffusion" flame burners are now successfully operating in plants of prominent automotive parts manufacturers. The total absence of scale on the stock in the billet heater is an outstanding feature of these operations. The value of this absence of scale on the billet cannot be over estimated as many indirect but tangible advantages result, such as: Longer die life, a minimum of metal loss, machining costs materially reduced, and rejections minimized.

Further increased production per furnace, i.e., more pounds heated per square foot of hearth area, as well as longer life to furnace refractories, result with this new and improved method of heating.

For heating operations such as annealing, normalizing, hardening, drawing, cyaniding, and similar heating work; and for soft metal melting, carburizing, vitreous enameling, galvanizing, smelting, malleabilizing, etc., G-4 butane is an ideal gas due to high combustion efficiency and uniform physical characteristics. Automatic proportioning equipment of the variable orifice type and of the venturi or low pressure inspirator type has proven very satisfactory for use with undiluted G-4 butane. This type will operate equally satisfactorily with partial butane-air mixtures of from, say 600 to 800 B.t.u. value. With this equipment it is interesting to note that the initial heating up time is usually reduced about 50 per cent as compared to time required with city gas, due to higher burner manifold pressures obtained with a given air pressure to the inspirator.

Other Heating Uses

For oven heating such as drying, japanning, enameling, burnoff, core baking, and the like, G-4 butane is working out very satisfactorily. It is flexible, clean, easy to handle and forms products of combustion free of injurious products such as sulphur compounds, dust, tars, or gums. On this type of work G-4 butane is burned in various appliances. Both direct, recirculating or indirect air heaters are used, equipped with low pressure inspirator automatic proportioning equipment, used with air pressure at approximately 1 pound, or with compound injector burners using G-4 butane at several pounds pressure, primary air being inspirated at the mixer and secondary supplied by the suction fans on the heaters. On many small drying, baking and burnoff ovens, G-4 butane is used at line pressure through compound injectors and pipe or ribbon burners. Pipe burners are either ordinary drilled pipe or pipe fitted with various kinds of tips such as ribbon, lava, steel blast, multiple tube, etc. Improved atmospheric appliances are now available for use with undiluted G-4 butane at low pressures due to co-operative research work with the various manufacturers of such equipment. These improved appliances were not available in the early stage of G-4 butane gas development as there was then no demand for such industrial appliances.

Several large industrial areas are supplied with low cost natural gas. Along many high pressure natural gas transmission lines are located industrial plants using large amounts of natural gas for manufacturing plate and window glass, cement, burning brick, terra cotta and lime, and for smelting lead and zinc. These types of gas loads are termed "main line industrial," and are sold direct by the pipe line company rather than by the gas utility serving the city or town. Usually the gas is sold at a very low or "dump" rate with the provision that the service may be shut off on short notice when and if the supply from the transmission line is required to handle the domestic demand in the connected cities or towns. Hence, it is absolutely necessary for the industrial plant, obtaining gas on the "shutoff" basis, to provide a suitable standby fuel in order to maintain production on continuous processes and to avoid plant shutdowns. Prior to the availability of G-4 butane, oil was the principal standby fuel. G-4 butane is, however, a much more satisfactory standby fuel because of the similarity in combustion characteristics to natural gas, and because natural gas piping and burners can be made use of, thus eliminating a duplicate pipe distribution system and separate burners within the plant. Since G-4 butane is held in storage tanks under pressure, and since it is free from water, sludge or other impurities, it will not deteriorate when stored for long periods of time. A G-4 butane standby provides the best possible assurance of continuous production.

Internal combustion engines of the large, stationary types are using G-4 butane with excellent results. These engines are utilized for generating electric current, pumping liquids or operating air and gas compressors. This application is an excellent supplementary one in plants using G-4 butane for heating purposes as no additional investment is necessary in the way of storage and vaporizing equipment. The combustion characteristics of G-4 butane are ideal for smooth, efficient engine operation. Many small manufacturing plants have a high electric rate, thus making it advisable to consider butane fueled engines for generating their electric current.

A number of large motor car and industrial engine manufacturers are using butane for their block testing or "wearing in" operations. Practice in this respect differs widely regarding "wearing in" speeds, time and method of mixing or carbureting. Gasoline and city gas have been replaced at those plants now using G-4 butane. The advantages of butane for this work are:

Low fuel cost.

Clean motors—elimination of carbon deposits on pistons and valves, as well as absence of scale on valves.

Improved idling characteristics.

Cooler running motors.

A more thorough, or "rugged" test.

Quicker starting of motors.

Smoother running engines—less "loping."

An interesting recent development is in the field of space heating with G-4 butane through unit heaters. This method of heating is working out nicely in a large fruit house in the Northwest and is showing many economies over steam heating. Automatic temperature regulation is, of course, used. The initial investment in G-4 butane plant and unit heaters is much less than an equivalent steam system.

In addition no labor, except for time required to unload tank cars of G-4 butane, is necessary. G-4 butane offers a good supplementary fuel at plants using it for furnace heating purposes, for space heating of outlying buildings or additions when the capacity of the existing steam heating system is taxed to handle the connected radiation or process load. A number of plants are employing butane this winter for many such space heating applications.

Use as Cutting Fuel

Some special uses of G-4 butane found to be highly satisfactory are in connection with oxygen for oxy-butane cutting either by hand or machine torches, and for oxy-butane welding of very light stock. Several leading automobile body manufacturers are using G-4 butane and compressed air through hand torches for brazing, soldering and local or spot annealing with much success, having replaced city gas and some acetylene. The inflammable range for G-4 butane (1.9 to 8.4) is much less than for city gas, which results, on torch work, in close attention of the operator in obtaining the proper and most efficient air-gas ratio. With G-4 butane, the flame is necessarily efficient when it is satisfactory; however, with city gas the flame may be quite satisfactory over a large portion of the inflammable range, but is only efficient within narrow limits, consequently the operator inadvertently wastes considerable gas. Plant engineers who have used both G-4 butane and city gas estimate from 5 to 15 per cent less B.t.u. required over a long period of time for hand torch work. A very hot flame is produced with G-4 butane and compressed air, particularly with some of the standard types of gas and compressed air torches that are now available, and which have been successfully modified to suitably handle G-4 butane of 3,200 B.t.u. per cubic foot.

A leading can maker is now using G-4 butane at five large plants for soldering, sweating, lithographing, and other heating work such as tool heating, drying, and in the cafeteria and laboratory. These plants use a total premix system on all soldering and sweating work. The uniform flame lengths and high flame temperatures are important advantages of G-4 butane for this specialized work. In heat-

(Continued on Page 67)

*Read by H. Emerson Thomas before the Compressed Gas Manufacturers Association.

[1]Note—G-4 has the following specifications in part:

Vapor pressure at 70° F. (pounds per square inch gauge)	33
Vapor pressure at 90° F. (pounds per square inch gauge)	53
Vapor pressure at 100° F. (pounds per square inch gauge)	65
Vapor pressure at 130° F. (pounds per square inch gauge)	110
A.P.I. gravity	114.2
Initial boiling point, °F.	12
Final boiling point, °F.	30
Weight per gallon of liquid, lbs.	4.8
Cubic feet of gas per gallon of liquid	32
B.t.u. per cubic foot of gas	3,200

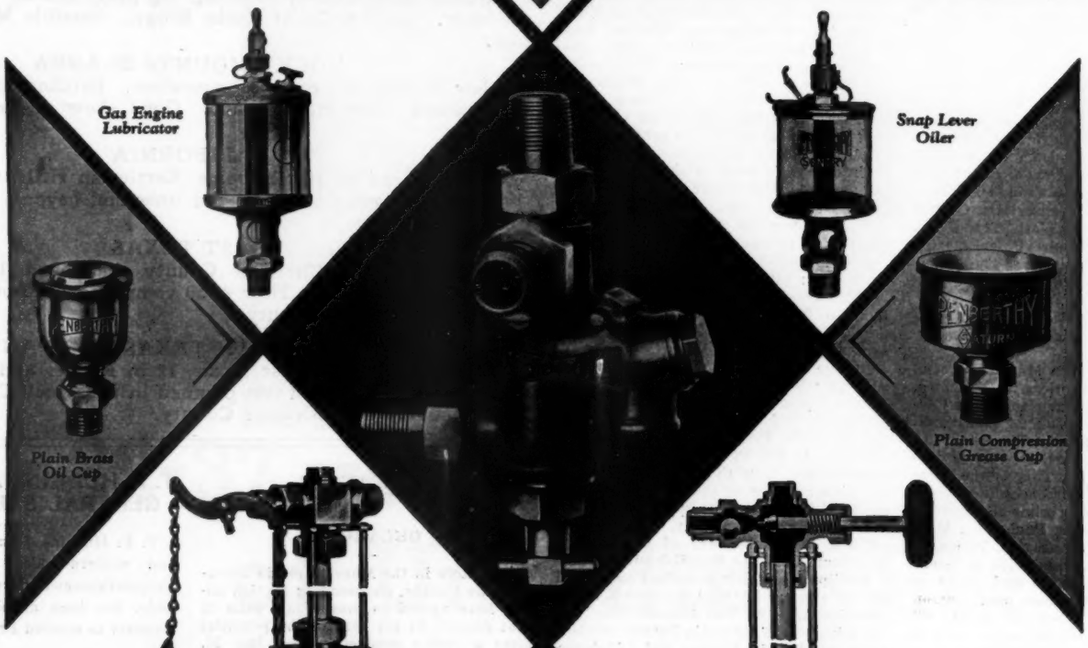
[2]Reference is made to Engineering Research Bulletin No. 21 of the University of Michigan entitled, "The Influence of Atmosphere and Temperature on the Behavior of Steel in Forging Furnaces."

TABLE 1.

Kind of gas—	B.t.u. value per cu. ft. gross	Available heat at 2,000°F. B.t.u. per cu. ft.	Per cent of gross B.t.u.
Anthracite producer gas	134	46.2	34.4
Bituminous producer gas	150	56.2	37.4
Blue water gas	308	164.1	53.3
Coke oven gas	538	282.9	48.1
Texarkana natural gas	967	442.9	45.8
Ohio gas	1,131	537.1	47.5
Propane	3,519	1,355.3	49.8
Butane	3,274	1,644.0	50.0
Blast furnace gas	102	31.7	31.0

PENBERTHY PRODUCTS

PREDOMINATE



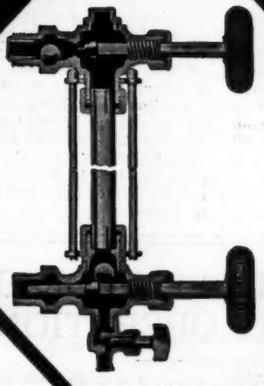
Gas Engine Lubricator

Snap Lever Oiler

Plain Brass Oil Cup

Plain Compression Grease Cup

Navy Type Liquid Level Gauge



Safeguard Automatic Liquid Level Gauge

Screw Plunger Grease Cup

Spring Compression Grease Cup

The Oil Industry is a seasoned industry, with years of field experience on which to build its standards and to guide its buying practices . . . ¶ The fact that Penberthy Products predominate in the buying of this industry is the best evidence obtainable that they satisfy most completely the demands of the Oil Industry . . . ¶ You too can rely on the Penberthy Products stocked by your local supply house.

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DETROIT

CANADIAN PLANT WINDSOR, ONT.

CRUDE PRICE INCREASES IN SIX SOUTHWESTERN OIL STATES

By James McIntyre

Crude oil price increases of practically 15 cents per barrel were made effective on April 1 or April 2, by numerous purchasing companies in Kansas, Oklahoma, Texas, North Louisiana, Arkansas and southeastern New Mexico. All the major buyers have boosted their price schedules excepting the Standard Oil Co. (New Jersey), Standard Oil Co. of Indiana and the Gulf Oil Corp. which are expected to come into the fold later in the week if not late today. This was written Tuesday afternoon.

The price increase in the Mid-Continent inaugurated by the Continental Oil Co. and effective April 1 spread to other fields after the Continental made its advance statement, and by Tuesday of this week the following companies had all posted advances in their prices: Sinclair Refining Co. in Kansas, Oklahoma, North and Central Texas and East Texas; Barnsdall Refineries, Inc., in Kansas and Oklahoma; Derby Oil Co., Vickers Petroleum Co., Skelly Oil Co., Kanotex Refining Co. and White Eagle Oil Corp. in Kansas; Phillips Petroleum Co. in Kansas, Oklahoma and Texas Panhandle; Magnolia Petroleum Co. in Oklahoma, North and Central Texas, East Central Texas, East Texas, West Texas and Southwest Texas; Empire Pipe Line Co. in Kansas and Oklahoma; The Texas Company in Oklahoma, North and Central Texas, Southwest Texas, West Texas, Lea County, New Mexico, the Gulf Coastal fields, North Louisiana and Smackover, Arkansas.

Effective April 1 the Magnolia Petroleum Co. posted new prices in Oklahoma, North and Central Texas and East Central Texas making below 28 gravity oil 67 cents; 28-28.9 gravity 76 cents, with 2 cents added for each degree upward to 40 and above at $1. This is the same as the Continental price schedule except for the lowest gravity (below 28 degrees). In Gray County, Texas Panhandle, Magnolia posted below 35 gravity, 76 cents; 35-35.9 gravity 78 cents with a 2-cent differential upward to 40 and above at 88 cents. In Hutchinson and Carson Counties it posted below 35 gravity 66 cents; 35-35.9 gravity 68 cents with 2 cents added for each degree upward to 40 degrees and above at 78 cents. The Magnolia posted East Texas crude at 98 cents; Winkler, Crane, Upton, Howard, Glasscock and Mitchell Counties, Texas, crudes at 65 cents; Mirando, Tex., 90 cents; Luling and Corsicana, Tex., heavy, 64 cents; Darst Creek, Tex., 75 cents and Lytton Springs, Tex., 94 cents.

Effective April 1, The Texas Company adopted the Continental Oil Co.'s price schedule in Oklahoma, North Texas and North Central Texas. It adopted the Magnolia Petroleum Co.'s prices in Gray, Carson and Hutchinson Counties, in the Texas Panhandle. It posted 65 cents per barrel in Winkler, Crane and Upton Counties in Texas and Lea County, New Mexico; 75 cents in Darst Creek, Tex.; 98 cents in East Texas.

The Texas Company inaugurated the increase in the Gulf Coast and in North Louisiana and Arkansas. Effective April 1 in the Gulf Coast the company posted below 25 gravity 80 cents; 25-25.9 gravity 81 cents with a 1-cent differential upward to 40 degrees and above at $1. In North Louisiana The Texas Company posted below 25 gravity 68 cents; 25-25.9 gravity 70 cents, with 2 cents added for each degree upward to 40 degrees and above at $1. Smackover, Ark., crude was advanced to 65 cents.

The Philtex Oil Co., effective March 31, posted Carson, Moore and Hutchinson Counties, Texas Panhandle, crudes, as follows: Below 30 gravity, 51 cents, 30-30.9 gravity 53 cents with a 2-cent increase for each degree upward to 40 degrees and above at 73 cents. On the same day it increased Gray County, Texas, crude as follows: Below 30 gravity, 61 cents; 30-30.9 gravity, 63 cents, with 2 cents added for each degree upward to 40 degrees and above at 83 cents. When the Magnolia Petroleum posted its price increases in the Panhandle, they were 5 cents higher than the Philtex prices on the higher grades of oil, and the Philtex on April 5 advanced its schedules 5 cents for each degree of gravity. The Philtex Oil Co. is a subsidiary of the Phillips Petroleum Co. The Standish Oil Co., also a Phillips subsidiary, met the Continental Oil Co.'s prices in Oklahoma and Kansas, effective April 2. The Empire Pipe Line Co. adopted the Magnolia Petroleum Co.'s price schedule in Kansas and Oklahoma and the White Eagle Oil Co. did likewise in Kansas.

PUBLIC DOMAIN OPEN FOR OIL UNDER UNIT OPERATION PLAN

WASHINGTON, D. C., Apr. 4.—The public domain of approximately 180,000,000 acres was thrown open to oil prospectors today on condition that if petroleum is found any pool discovered must be operated as a single unit.

An order to that effect sent by Secretary Wilbur went into force immediately, permitting oil prospecting on public lands for the first time since March 13, 1929.

Authority to require that drilling in government-owned lands be under the unit operation plan was given the interior department by the last Congress.

"Unit operation of the oil pools," said Secretary Wilbur, "offers the most substantial reliable basis yet developed for constructive handling of oil conservation."

The department has had two years of experience with unit operation in Kettleman Hills, California.

Secretary Wilbur said that "while there are opportunities for constructive legislation in regard to state compacts and prorata agreements, if the principle of unit operation can be established, that principle will be more effective than any other measure in conserving the national resources in oil and gas."

The object of Secretary Wilbur's order was described as to protect the rights of all with permits through requiring the operation of fields as units. Under the situation that go with the order, Secretary Wilbur said, the bona fide prospector will find no difficulty but the speculator will receive little encouragement.

In his order Secretary Wilbur provided that a 60-day preference period be given permittees and applicants whose claims were pending on March 13, 1929, and were rejected.

One of President Hoover's first official acts was to order public lands closed to oil prospecting. Later the interior department rejected about 5,000 applicants pending at the time.

Under the order the applicant must agree to submit to the secretary within two years from the date of a permit an acceptable plan for prospecting and developing as a unit of the pool, field, or area affecting the permit land, with evidence either that such a plan has been agreed to by the parties in interest and will insure effective unit operation if oil or gas is discovered, or that in the event of failure to so agree the parties will conform to such plan as the secretary may prescribe, which shall adequately protect the correlative rights of all permittees and other parties in interest, including the United States.

The applicant further must agree that

(Continued on Page 73)

High Spots in Field News

OKLAHOMA

New allowables and new drilling regulations in Corporation Commission's orders. Allowable increased to 452,160 bbls.

SOUTHWEST TEXAS

New field opened in Starr County. Two tests starting in Brooks County. Wildcat planned in Southern Colorado County.

KANSAS

Allowable production in state increased to 130,000 bbls. but present demand is below 100,000 bbls. Central west developing.

NORTH LOUISIANA, ARKANSAS, MISSISSIPPI

New producing area in Sabine parish. New gas field in Western Caddo Parish. Shelby County, Texas, well better than expected.

GULF COAST

Montgomery County entering big play; second well shows for producer. Good wells at Rabbs Ridge. Possible Markham extension.

ROCKY MOUNTAIN AREA

New Mexico suit may test proration. Drilling to be resumed in Greasewood district, Colorado. Good show of gas in Archeluta County.

CALIFORNIA

Western end of North Dome, Kettleman Hills, to be tested by three tests between blue and red lines and beyond blue line. Gas waste reduced.

EAST TEXAS

Outpost test in Cherokee County abandoned, limiting Joiner district to Southwest. Now 4,750 completions. Bottom hole pressure drops in Gregg County.

WEST TEXAS, NORTH TEXAS AND PANHANDLE

Five locations in West Texas, 12 in Ranger and 27 in Wichita Falls district. Unitized test planned in Glasscock County. Torsion balance survey in Schleicher County.

Late Fields

OKLAHOMA

Operators in the Monett area in Pottawatomie County, surrounding Section 35-7-4, have agreed to prorate all wells in that district 44 per cent of the potential after a 10-day production test, Ray M. Collins announced. The discovery well, Carter Oil Co. and others' No. 1 Monett, SW cor., Section 35-7-4, made 1,368 bbls. in 24 hours ending April 4.

F. Cusick and others' No. 1 in the NE cor. SE SW, Section 15-13-14, Okmulgee County, in the old Simms Pool, was drilled deeper to the Turkey Mountain sand at 2,728-33 feet where oil rose 2,400 feet in the hole. The old total depth was 2,450 feet in Wilcox sand. It is believed this showing will lead to additional drilling in this old territory.

KANSAS

Kansas field work continues to show a gain. Six new wells were completed during the week ending April 2, with an initial output of 4,153 bbls. daily.

Continental Oil Co. and Gypsy Oil Co.'s No. 1 Corr, SE cor. NW Section 12-26-1w, has been completed for 126 bbls. of oil and 56 bbls. of water in 24 hours, by pumping. The well extended production a quarter of a mile in the Wright Pool, in Sedgwick County.

In the Eastborough Pool, in Sedgwick County, Fisher & Lauck's No. 1 Trustee, in Section 19-27-2, was drilled deeper from the chat at 2,838 feet to the

(Continued on Page 73)

MAGNETIC STORM

Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey report a magnetic storm starting at 10 a.m. (C.S.T.) on April 1 and ending at 4 a.m. (C.S.T.) April 5, and one starting at 8 a. m. (C.S.T.) March 28 and ending at 8 a. m. (C.S.T.) April 1.

T. F. HUDGINS APPOINTED GENERAL SALESMANAGER

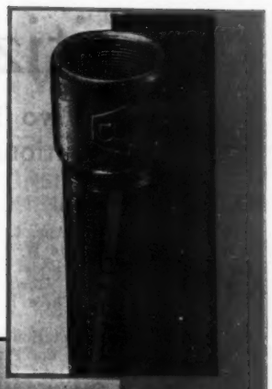
T. F. Hudgins, formerly vice president and western sales manager for The Cooper-Bessemer Corp., Mount Vernon, Ohio, has been appointed general sales manager to succeed Fred H. Thomas, who

T. F. Hudgins

died March 27 after 25 years' service in the organization.

Mr. Hudgins, who joined the former C. & G. Cooper Co. in 1923, has been in charge of all sales west of the Mississippi River. He is an experienced engineer, a successful salesman and well known in the engine industry. Mr. Hudgins will reside in Mount Vernon, where the general offices of The Cooper-Bessemer Corp. are located.

120 Miles of Genuine Wrought Iron Pipe Reinstalled after 32-37 years of Unfailing Service



PUT YOUR FAITH IN SERVICE RECORDS

Wouldn't you prefer to base your pipe specifications on *factual data* rather than on mere unproved claims?

Of course you would! And that is why the Byers Company, in their advertising, would rather give you actual "service records" instead of claims which have not been borne out by use in the field.

Here, for example, is a typical Byers "service record." One hundred and twenty miles of used wrought iron pipe in sizes of from two to four inches was recently purchased from a large pipe line company. Most of this pipe had been in service underground, in Wood County, Ohio, from thirty-two to thirty-seven years. Upon examination by metallurgical experts this pipe was found to be in excellent condition, even to the threads. As the purchaser candidly put it, "just as smooth as the day it came from the mill."

Now, consider for a moment the widely varying soil conditions through which this pipe line passed in 120 miles. Think of the number of corrosive "hot spots" it must have encountered! Then think of the service it rendered. On such evidence as this we say: "Put your faith in service records." Byers oil country engineers, with experience gleaned from long contact with oil and gas piping problems, will gladly confer with you and show you how to reduce your "hot spot" overhead. A. M. Byers Company, Pittsburgh, Pa., Established 1864.

BYERS GENUINE WROUGHT-IRON PRODUCTS

PIPE • CASING • COUPLINGS • NIPPLES • WELDING ELBOWS • SPECIAL ELBOWS • SPECIAL BENDING PIPE
BAR IRON • TUBING • PLATES • SHEETS • BILLETS

BYERS

Unitized Test in Glasscock County

Two Torsion Balance Crews Working in Schleicher County. Increased Locations in Ranger and Wichita Districts. Good Canyon Series Showing

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Apr. 4.—There were five locations staked in West Texas during the week, two in Pecos County, one in Glasscock, one in Howard and one in Jones County. Three locations were abandoned.

The most interesting location of the week was that staked by the Penn Oil Co. on the F. A. Hobenstreit ranch in Section 47, Block 36, Township 3s, T.&P. Survey, Glasscock County. This is to be a unitized test in which the California Co., Fuhrman Petroleum Corp. and Honolulu Oil Co. are joint holders of acreage with Penn Oil Co.. Humble Oil & Refining Co. has also purchased a half interest in the Penn Oil Co.'s holdings in the block. This will be one of the first unitized blocks to be drilled in the district.

Allowables Adjusted

After a hearing by the Railroad Commission during the week only one change was made in daily allowables of the West Texas fields. This change was made in Winkler County, cutting the allowable to 35,000 bbls. per day, which is rather humorous since the field can hardly produce any more than that because of such a large volume of water in the wells. The Howard-Glasscock allowable is 26,000 bbls., Crane-Upton Counties 16,700 bbls. and Yates 65,000 bbls. Operators in the Big Lake Field have agreed to cut the allowable to 25,000 bbls. per day in that field, a reduction of 10,000 bbls.

The oil-gas ratio of the Yates Field is now 335 to 1, a decrease of 36 per cent since the first of the year. The per well allowable is 81.8 bbls. at the present rate of production. The reservoir pressure is falling at the rate of six-tenths of a pound to every 1,000,000 bbls. of oil produced. The average bottom hole pressure is now 575 pounds. There are 403 wells in the field, the majority of them having been tubed.

There are 557 wells in the Crane-Upton County areas, producing a daily average of 19,212 bbls., only 52 of this number still flowing, the others being on the pump, and water causing considerable lifting troubles, and adding to the cost of producing the oil in the fields.

Schleicher County

The Humble Oil & Refining Co. has two torsion balance crews working in Schleicher County, east of Eldorado, between Wesner's No. 1 Nicks test and Eastland Oil Co.'s No. 1 Tisdale.

This company has purchased 800 royalty acres in Block UV and WX in Crockett County. The Superior Oil Co. of California has also purchased 800 royalty acres in the same blocks, and The Texas Company 480 acres in this area. These companies have all acquired several thousand acres of leases in this part of the county, believed to be purchased on the basis of later deep drilling and possible Ordovician production.

Runnels County

A Mr. Stewart has taken leases on 4,500 acres near the town of Content in Runnels County and will drill a 4,000-foot test later. The block lies in the Arnold Survey No. 26, Caudrilla Irrigation Co., W. Oates Survey, M. Allen Survey No. 42, J. E. Smith, M. E. Bright, G. F. Oates, W. D. Hayden, E. J. Goats, G. W. Wilson, A. D. Hanscomb, J. W. and N. W. Matthews Surveys.

Ector County

Charles Messenger has taken over the H. F. Wurtz' No. 1 Ibbetson and others in Section 16, Block 46, G.M.M.B.&A. Survey, Ector County, and is preparing to drill it deeper. Six and five-eighths-inch casing is being underreamed. Total depth is 3,275 feet, having stood at this depth for several months. It is in the southwestern part of the county.

Irion County

Plymouth Oil Co.'s No. 1 Suggs in Section 3,081, Block 28, H.&T.C. Survey, an interesting deep wildcat in Irion County, is below 7,300 feet. The last increase in oil was logged at 6,813 feet, with more gas at 6,820 feet. Stanolind Oil & Gas Co.'s No. 1 Williams is still shut down as a result of a fire on the rig three weeks ago.

Gulf Production Co. completed its No. 20 O'Brien and Edwards well this week for an initial production of 200 bbls. daily, flowing. This test formerly encountered 2½ bailers of water per hour at 2,800 feet and had to be plugged back to 2,775 feet to shut off the water. Top of the pay was logged at 2,624 feet. It is located in Section 16, Block F, G.M.M.B.&A. Survey.

Eastland Oil Co.'s No. 1 Tisdale in Schleicher County, is drilling at 5,375 feet in white and gray lime . The Wessner-Nicks test is still fishing. Total depth is 5,575 feet.

Daily average oil shipments from West Texas, week ending March 31:

SHIPMENTS THROUGH MAIN TRUNK LINES

Company, size and location—	Amt.
Atlantic P. L. Co., 10-in., Houston	16,967
Gulf P. L. Co., 10-in., Ranger	19,084
Humble P. L. Co., 2 and 8-in., San Angelo	35,476
Humble P. L. Co., 12-in., Ingleside	50,344
Illinois P. L. Co., 2 and 8-in., Del Rio	26,421
Magnolia P. L. Co., 8-in., De Leon	none
Shell P. L. Corp., 10-in., Cushing, Okla.	20,026
Shell P. L. Corp., 10-in., Houston	14,269
Texas P. L. Corp., 12-in., Houston	15,840
Total	198,427
Shipments to refineries	20,991
Tank car shipments	none
Total daily average distribution	219,418
Daily average production (incl. Lea County, New Mexico)	215,585
Daily average from storage	3,833

RANGER AND WICHITA FALLS

Locations in the Ranger district increased materially, two having been filed in Brown, four in Callahan, one in Eastland, two in Shackelford, two in Coleman, and one in Comanche. There were three completions in Eastland, one in Palo Pinto and two in Shackelford County.

Locations also increased in the Wichita Falls district. There were 13 staked in Archer, eight in Young, four in Wichita, two in Grayson County. There are now 35 active operations in Young County, 5 in Wichita and 40 in Archer County, deep drilling in the Chalk Hill area of the latter county proving much of the activity in the latter county.

Perkins and Cullum's No. 1 Abercrombie in the John Harris Subdivision, Block 157, a wildcat southwest of Archer City in Archer County, was no doubt the most closely watched test in the Wichita Falls district during the week and since it topped a pay horizon at 1,190-95 feet and filled and slopped over with oil. During the week it was swabbing 35 bbls. of oil and 12 bbls. of water per day. The pipe split letting in the water. Five and three-sixteenths-inch casing will be run.

Beard and Hammond and Steel's No. 1 Bridwell, 3½ miles north of the Chalk Hill area, Archer County, looks like a dry hole after drilling to 2,353 feet in search of the deep pay in this area. It topped the Gunsight lime at 1,575 feet going out of it at 1,560 feet, encountering no sands below this. Elevation is 992 feet.

Canyon Series Test

Deep Oil Development Co. and Lindsey Drilling Co.'s No. 2 Wilson is the best Canyon series test yet completed in the Chalk Hill area of Archer County. It had an oil showing from 2,206-11 feet, and 2,212-17 feet, the latter being the total depth. It is estimated good for 887 bbls. per day. No. 3 of the same company is estimated good for 700 bbls. per day with tools in the hole. It encountered the oil horizon at 2,201-08 feet and 2,209-13 feet.

Cavin and Minto are to drill a test on the Wilson farm, 1½ miles south of Chalk Hill in Archer County. It will be a rotary test to the Canyon series.

The Perkins and Cullum well is 1 mile northwest of three wells making a little oil from the same horizon and 5 miles from the nearest important production.

(Continued on Page 76)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ending April 4

ANDREWS COUNTY

Company, well, farm name, section and block— Remarks—

Fuhrman Pet. Co.'s No. 1 Boner, 1,320 ft. from N and 440 ft. from W, Sec. 24, Blk. A-43, P.S.L. ..... Drlg. 2,800 ft.

BREWSTER COUNTY

Brewster Oil Co.'s No. 1 fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur. ..... S.D. 1,935 ft.

E. L. Chapman's No. 1 Skinner, C SW SE Sec. 100, Blk. 2, G.C.&S.F. Sur. ..... S.D. 1,302 ft.

Trans-Pecos Oil & Gas Co.'s No. 1 Jones, 930 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.& S.F. Sur. ..... S.D. 2,900 ft.

Van McPhail's No. 1 McIntyre, SE cor. Sec. 59, Blk. 352, 7 miles south Alpine ..... S.D. 1,750 ft.

COCHRAN COUNTY

Penn Oil Co.'s No. 1 Slaughter, C Labour No. 80 of League 129, Carson County School Lands ..... T.D. 5,052 ft.

CONCHO COUNTY

Beesley et al's No. 1 Waring Estate, 400 ft. from N and E, Sec. 163, T.&N.O. Sur. ..... T.D. 1,110 ft.

CROCKETT COUNTY

Doleman & Moore's No. 1 Ferner, 2,135 ft. from N and 1,485 ft. from E of Sec. 36, Blk. 2, I.&G.N. Sur. ..... Spudded and S.D.

CORE COUNTY

Mid-Kansas Oil & Gas Co.'s No. 1 Hearn, 980 ft. from S and W, Sec. 271, Blk. 1-A, H.&T.C. Sur. ..... Rigging up.

DAWSON COUNTY

Albaugh et al's No. 1 Robinson, C NW Sec. 46, Blk. M, E.L.&R.R. Sur. ..... To resume drilling.

ECTOR COUNTY

Thomas et al's No. 1 Edwards, 330 ft. from S, 2,310 ft. from E, Sec. 38, Blk. 43, Twp. 3s, T.&P. Sur. ..... Moving in material.

Weekly Oil Corp. et al's No. 1 Cowden, 1,980 ft. from N and W, Sec. 33, Blk. 43, Twp. 2s, T.&P. Sur. ..... T.D. 4,375 ft.; now plugging back for gas well.

H. F. Wurtz' No. 1 E. A. Ibbetson et al, 330 ft. from N and E lines of NW Sec. 16, Blk. 46, Twp. 3s, G. M. M.Br.&A. Sur. ..... Underreaming; T.D. 3,280 ft.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Bobadella, 1,325 ft. from S and E lines Sur. 254, S.F. No. 7,247 ..... S.D. 2,257 ft.

FISHER COUNTY

Condor Petroleum Co.'s No. 1 Steele, 660 ft. from S and 330 ft. from W of W half of SE Sec. 210, B.B.B.&C. Ry. Sur. ..... Spudded.

(Continued on Page 62)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending April 4

BRISCOE COUNTY

Company, well, farm name, section and block— Remarks:

Humble O. & R. Co.'s No. 1 C. Adair est., 2,500 ft. from N line, 2,100 ft. from E line, Sec. 7, Blk. G-6 ..... Drlg. 2,750 ft.

CARSON COUNTY

H. A. M. Oil Co.'s No. 2 Cooper, 330 ft. from S and E. Sec. 5, Blk. 9, I.&G.N. Sur. ..... Location.

Pulse-Shell Pet. Corp.'s No. 1 Byrum, 330 ft. from N and W, W½ NE, Sec. 188, Blk. 3, I.&G.N. Sur. ..... Rig.

Skelly Oil Co.'s No. 27 Schaffer, 1,265 ft. from S and 440 ft. from W, Sec. 88, Blk. 4, I.&G.N. Sur. ..... Drlg. 2,025 ft.

Texhoma Nat. Gas Co.'s No. 1-S Burnett, center SE, Sec. 94, Blk. 5, I.&G.N. Sur. ..... Drlg. 2,095 ft.

Texoma Nat. Gas Co.'s No. 1-G Haiduk, 2,589 ft. from N, 1,531 ft. from W, Sec. 21, Blk. 4, I.&G.N. Sur. ..... Location.

CHILDRESS COUNTY

C. L. Sloan et al's No. 1 B. P. Smith, Sec. 49, F. P. Knott lands ..... T.D. 5,000 ft.

COLLINGSWORTH COUNTY

Dixon et al's No. 1 Bell, 330 ft. N, 1,320 ft. W, Sec. 102, Blk. 21, H.&G.N. Sur. ..... S.D. 2,508 ft.

Downey et al's No. 1 Beasley, SE cor. SW SE, Sec. 95, Blk. 15, H.&G.N. Sur. ..... Rigging up.

DEAF SMITH COUNTY

Western Union Oil Co.'s No. 1 Farwell, C NW, Sec. 18-3n-2e ..... S.D. 275 ft.

GRAY COUNTY

Back & Barber's No. 1 Back, 660 ft. from S, 330 ft. from W, Sec. 140, Blk. 25, H.&G.N. Sur. ..... Set 8-in. csg. 2,407 ft.

Boyes et al's No. 1 Colebank-Morse, 330 ft. NE, Sec. 65, Blk. 25, H.&G.N. Sur. ..... Spudded and S.D.

Brown et al's No. 1 Duncan, 330 ft. S and E, NW, Sec. 93, Blk. 3, I.&G.N. Sur. ..... T.D. 3,530 ft.; cleaning out.

Danciger O. & R. Co.'s No. 3 Byrum, 330 ft. from N line, 330 ft. from E line, Sec. 188, Blk. 3, T.&N.O. Sur. .. T.D. 3,249 ft.; T.P. 3,110 ft.; to shoot.

Foster's No. 1 Webb, 330 ft. from S and W, Sec. 43, Blk. 25, H.&G.N. Sur. ..... Drlg. 300 ft.

Graham et al's No. 1 Barrett, 990 ft. from N, 330 ft. from E, Sec. 112, Blk. 3, I.&G.N. Sur. ..... Cellar.

Granite Prod. Co.'s No. 1 Chapman, 275 ft. from N line, 110 ft. from W line, S½ SW, Sec., of Blk. 26, H. &G.N. Sur. ..... Drlg. 1,175 ft.

Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W, cor. SE, Sec. 200, Blk. 2-B, H.&G.N. Sur. ..... S.D. 3,010 ft.; cleaned up fishing job.

(Continued on Page 61)

Pipe Line Construction News

SAGINAW, MICH., ANXIOUS TO PROCURE NATURAL GAS

The city of Saginaw, Mich., located near the Mount Pleasant natural gas field, is anxious to obtain the advantages of natural gas as a fuel for its industries and residents. George Phoenix, mayor of Saginaw, in a letter to The Oil and Gas Journal, promises full co-operation of the city administration and public in efforts to have a pipe line constructed from the field to the city. The letter from Mr. Phoenix follows:

"I would be pleased if you would run an article in the next issue of your Journal, advising your trade that we are now ready to accept proposals from contractors for the construction of a natural gas line from a field approximately 40 miles from Saginaw and supplying the industrial and domestic users of the city of Saginaw. As you are aware, we are now on the frontier with promises of being one of the largest natural gas fields in the Middle West and are desirous of having this natural gas piped into our city.

"The right contractor will find full co-operation among the city administration as well as the public and I believe that this is a real opportunity for the right parties. This has not been offered to the public as yet and trust that you can give the proper publicity so that some one of your contractors will receive benefits from this development. I suggest the proper party in the city for your contractors to get in touch with to be the writer."

NEW PIPE LINE SYSTEM TO SUPPLY McPHERSON

Another Kansas town will engage in the gas distribution business, on its own account. McPherson has declined to purchase the gas system of the McPherson Gas Co. and will purchase gas from a new pipe line company at the city gate and pipe the gas to the municipally owned light and water plants.

Construction of a distributing system to serve domestic and industrial consumers of McPherson is expected to be carried on slowly, financing the project out of earnings. No bonds will be voted under the plan at this time.

Gas will be supplied to the municipal system by the Hutcherson Pipe Line & Gas Co. The price paid by the city will be 12 cents for industrial purposes and 20 cents per 1,000 feet for domestic meters.

The Hutcherson Pipe Line & Gas Co. will obtain its supply from the Derby Oil Co. which has contracted to supply all the gas McPherson will need from wells of the Derby Oil Co. in the Ritz-Canton-Decker Field, in McPherson County.

CRAIG GAS LINE

When weather permits work, the Rocky Mountain Gas Co. (subsidiary of the Ohio Oil Co.) will start work on its pipe line from the Craig structure to the town of Craig and work on a distributing system in the municipality of Craig. The line will be about 3½ miles long and will consist of 3-inch and 4-inch pipe. Ohio Oil Co. recently completed a 11,000,000-foot well on the Craig structure in the base of the Mesa Verde at 2,820 feet. Acreage on the structure is owned by the Ohio, Midwest, and The Texas companies.

LINE TO ALLIANCE, NEB.

Providing a franchise is granted to the North Central Gas Co. of Casper, Wyo., by the town of Alliance, Neb., the company will extend its line to serve that city the coming summer. It will require about 35 miles of new line.

REVENUE BILL LEVIES TAX ON PIPE LINE TRANSPORTATION

WASHINGTON, D. C., Apr. 4.—The revenue act as passed by the House and sent to the Senate contains the following provisions affecting the petroleum industry:

"(a) There is hereby imposed upon all transportation of oil by pipe line originating on or after the fifteenth day after the date of the enactment of this act and before July 1, 1934.

"1. A tax equivalent to 8 per cent of the amount paid on or after the fifteenth day after the date of the enactment of this act for such transportation, to be paid by the person paying for such transportation and to be collected by the person furnishing such transportation.

"2. In case no charge for transportation is made, either by reason of ownership of the commodity transported or for any other reason, a tax equivalent to 8 per cent of the fair charge for such transportation, to be paid by the person furnishing such transportation.

"3. If (other than in the case of an arm's length transaction) the payment for transportation is less than the fair charge therefor, a tax equivalent to 8 per cent of the difference between such fair charge and the amount paid for such transportation, to be paid by the person furnishing such transportation.

"(b) For the purposes of this section the fair charge for transportation shall be computed:

"1. From actual bona fide rates or tariffs, or

"2. If no such rates or tariffs exist, then on the basis of the actual bona fide rates or tariffs of other pipe lines for like services, as determined by the commissioner, or

"3. If no such rates or tariffs exist, then on the basis of a reasonable charge for such transportation, as determined by the commissioner.

"(c) Every person collecting the tax imposed under subsection (a) (1) and every person liable for the tax imposed under subsection (a) (2) or (3) shall make monthly returns under oath in duplicate and pay such taxes to the collector for the district in which is located his principal place of business, or, if he has no principal place of business in the United States, then to the collector at Baltimore, Md. Such returns shall contain such information and be made at such times and in such manner as the commissioner, with the approval of the secretary, may by regulations prescribe.

"(d) The tax shall, without assessment by the commissioner or notice from the collector, be due and payable to the collector at the time so fixed for filing the return. If the tax is not paid when due, there shall be added as part of the tax, interest at the rate of 1 per cent a month from the time when the tax became due until paid.

"(e) Any person making a refund of any payment upon which tax is collected under this section may repay therewith the amount of the tax collected on such payment; and the amount so repaid may be credited against amounts included in any subsequent monthly return.

"(f) The provisions (including penalties) of Section 1,114 of the revenue act of 1926 shall be applicable with respect to the taxes imposed by this section.

"(g) The commissioner, with the approval of the secretary, shall prescribe and publish all needful rules and regulations for the enforcement of this section."

In the case of the following articles, the tax imposed shall be at the following rates:

"Tax on lubricating oil—Lubricating oils, of the grades designated (at the time of the enactment of this act) by Society of Automotive Engineers viscosity Nos. 20 to 70, inclusive, 4 cents a gallon.

"Tax on imports—Crude petroleum, fuel oil derived from petroleum, gas oil derived from petroleum, and gasoline, imported into the United States, 1 cent a gallon, but no article described in this paragraph shall be exempt upon importation from tax under this title as an article for further manufacture, and no credit or refund of tax imposed upon the importation of any article described in this paragraph shall be allowed under Section 605 (a).

"1. General rule—The basis upon which depletion is to be allowed in respect of any property shall be the adjusted basis provided in Section 113 (b) for the purpose of determining the gain or loss upon the sale or other disposition of such property, except as provided in paragraphs 2 and 3 of this subsection.

"2. Discovery value in case of mines—In the case of mines discovered by the taxpayer after February 28, 1913, the basis for depletion shall be the fair market value of the property at the date of discovery or within 30 days thereafter, if such mines were not acquired as the result of purchase of a proven tract or lease, and if the fair market value of the property is materially disproportionate to the cost. The depletion allowance based on discovery value provided in this paragraph shall not exceed 50 per cent of the net income of the taxpayer (computed without allowance for depletion) from the property upon which the discovery was made, except that in no case shall the depletion allowance be less than it would be if computed without reference to discovery value. Discoveries shall include minerals in commercial quantities contained within a vein or deposit discovered in an existing mine or mining tract by the taxpayer after February 28, 1913, if the vein or deposit thus discovered was not merely the uninterrupted extension of a continuing commercial vein or deposit already known to exist, and if the discovered minerals are of sufficient value and quantity that they could be separately mined and marketed at a profit.

"3. Percentage depletion for sulphur, oil and gas wells—In the case of sulphur, oil and gas wells the allowance for depletion shall be 27½ per cent of the gross income from the property during the taxable year. Such allowance shall not exceed 50 per cent of the net income of the taxpayer (computed without allowance for depletion) from the property, except that in no case shall the depletion allowance be less than it would be if computed without reference to this paragraph.

"In any case in which a consolidated return is made the tax shall be determined, computed, assessed, collected and adjusted in accordance with the regulations under subsection (b) prescribed prior to the date on which such return is made; except that there shall be added to the rate of tax prescribed by Section 13 (a) a rate of 1½ per cent and only one specific credit, computed as provided in Section 26 (b) shall be allowed in computing the tax."

Section 13 (a) provides for a corporation tax rate of 13½ per cent.

PIPE LINE WALL MAPS

A limited number of the large wall maps published by The Oil and Gas Journal showing all crude oil, natural gas and gasoline trunk pipe lines in the United States are still available at $1 for the set, postpaid.

WISCONSIN INQUIRY ON NATURAL GAS LINE

CHICAGO, Apr. 4.—Suggesting that if Wisconsin gas utilities do not make contracts with the natural gas pipe line companies whose lines are approaching the state, and pass "adequate benefits" on to the consumers, applications will be entertained from the pipe line companies themselves to distribute the product, the Public Service Commission has just issued an order for an investigation of the natural gas situation.

In an order written by Commissioner David E. Lilienthal, the commission recognized the fact that natural gas pipe line interests are negotiating with nine Wisconsin public utilities for the piping of gas into the state, and stated that an investigation will be made of the situation with a view of "protecting the public interest."

Natural gas from the Texas and Mid-Continent fields is now within a few miles of the southern and western borders of Wisconsin, according to the order.

"It may be," the commission said, "that the Wisconsin gas companies will decline to purchase natural gas of the pipe line interests now at our borders, giving as their reason that no advantage will accrue to them or to Wisconsin users of gas as a result of the introduction of natural gas. If such a decision is ultimately made the commission is under an imperative duty to determine if the decision is justified, from the standpoint of the consuming public.

"It may upon investigation find that artificial gas is or can be manufactured so cheaply, particularly in the light of the by-product situation, that natural gas, either mixed or pure, when transmitted such vast distances at great cost, may actually result in a higher rate to the consumer than manufactured gas. If this is the case there is no advantage in permitting natural gas to come into the state."

The order states that if the decision by Wisconsin gas companies is to decline to deal with the natural gas interest solely because of a desire to protect their own interests and their own investment without giving adequate benefits enjoyed by consumers in other states, "the commission, to protect the public interest, might deem it necessary to entertain an application by a natural gas company for a certificate authorizing it to construct lines in the state to supply Wisconsin with natural gas."

SECOND DERBY LINE

Plans for the building of a second pipe line to serve the new oil field in southwestern Ellsworth County of western Kansas, have been announced by the Derby Oil Co. Construction is to start at once, President A. L. Derby said.

The line will be 10 miles long, connecting wells in the Stratman and the Stoltenberg pools with a loading rack at Lorraine on the Frisco. From that point the crude will be shipped in tank cars to Valley Center, where it will be pumped back into a Derby pipe line to the Derby refinery at Wichita. The line will be of 3 and 2-inch pipe. Derby owns wells in both the Stratman and Stoltenberg Pools. Stanolind Crude Oil Purchasing Co. completed the first pipe line to this district about three months ago.

LINE TO GARLAND COMPLETED

Illinois Pipe Line Co. has practically completed construction of a 4-mile line of 8-inch pipe from Garland, Wyo., to tie into the trunk line from Elk Basin at Cowley Junction. Work is in progress on an 80,000-bbl. steel storage tank at the pump station.

Outpost Test in Cherokee Abandoned

Joiner District Limited to Southwest. Bottom Hole Pressure Drops in Gregg County. Now 4,750 Wells in East Texas Area

By L. E. Bredberg

DALLAS, Tex., Apr. 4.—One outpost test in the northeastern corner of Cherokee County has been abandoned, thereby limiting the Joiner area to the southwest, but the county still has a good chance to be added to the list of producers in the East Texas district, one well now standing shut down with casing cemented having logged 2 feet of saturated sand, practically proving good for a producer when the plug is drilled and a test made.

The abandoned test was drilled by Clopton and others on the Pace farm in the Wesley Dykes Survey. It topped sand at 3,662 feet and was drilled to 3,665 feet, testing 22 joints of oil with several fourbles of salt water on a drill stem test. It is approximately 9,000 feet west of the nearest producer, and a little over 2 miles south of Merry Brothers and Perini's No. 1 Kelly which is showing for a producer. This last test is located in the M. De Los Santos Coy Survey, and is now shut down waiting on tubing. It cored 2 feet of well saturated sand from 3,677-79 feet. Surface elevation is 371 feet. Elevation of the Clopton test is 333 feet. Top of broken Austin in the Kelly test was logged at 3,495 feet and top of hard Austin at 3,525 feet. The Mid-Kansas Oil & Gas Co. has staked its second offset location to the Kelly test. It is a north offset on the Kelly farm, whereas the first offset was located to the east on the Cross farm in the Fowlks Survey.

With the abandonment of the Clopton test precluding the possibilities of production farther to the southwest only two other areas are left undefined. These are in the southeastern and extreme southern end of the Joiner area, Rusk County, and as there are three dry gas producers in the southern tip of the field even this area appears to have been defined. One test is now drilling on the J. Arnold farm in the William Christian Survey, 1 mile south of the first gasser drilled in the field. It is down 1,900 feet and will be closely watched for developments. It is considered a potential gasser, but may prove another paradox for the field making an oil producer, or may be a dry hole limiting the field to the south. It is on a lease recently acquired from the Pure Oil Co.

Extension to East

Whether the field will swing farther to the southeast depends on future tests in that direction. The last test in that area, Stanolind Oil & Gas Co.'s No. 1 Siler in the Thomas White Survey, extended the field another 2,000 feet to the east of the nearest producer.

Another test in the field has been given a shot, the fourth well to be shot in the district. Everts Drilling Co.'s No. 1 Knights of Tabor, in the H. Hobson Survey on the eastern edge of the Kilgore area in Rusk County, was shot with 91 quarts from 3,615-3,766 feet, and is to be shot once more in order to make a commercial producer. It topped the sand at 3,625 feet, drilling through the sand at 3,690 feet and to a total depth of 3,766 feet. Elevation is 455 feet.

Shell Petroleum Corp.'s No. 1-B Wells in the Daniel Clark Survey, Kilgore area, northern Rusk County, is another east edge well which will not flow. It is now waiting on standard rig, standing shut down at a total depth of 3,774 feet in Georgetown, topping the Georgetown lime at 3,768 feet, and the Woodbine sand at 3,674 feet. It is a north offset to Priest's No. 1 Mayfield, a good producer.

Humble Oil & Refining Co.'s No. 1 C. T. Shelton, another edge well, is now being plugged back from total depth of 3,319 feet to shut off water, and bring it back on production after it went dead. It topped the sand at minus 3,298 feet. This well is on the north edge of the Lathrop area, in the William King Survey, Upshur County.

Otto Morris and others' No. 1 T. B. Harris in the John Ruddle Survey, another east edge well, Gregg County, is shut down at 3,531 feet and will be shot with 90 quarts in an effort to make a small producer. It swabbed dry, but a shot may have the desired effect to make at least a pumper out of it. It topped the sand at 3,497 feet. Elevation is 335 feet.

Falling Pressure

Arkansas Fuel Oil Co.'s No. 1 Lathrop, the discovery well of the Lathrop area, Gregg County, has fallen off 125 pounds bottom hole pressure since its completion. Bottom hole pressure is now reported at 1,375 pounds. It has been on production a little over 12 months, which makes the drop in pressure close to 10 pounds per month. Drilling in the north Gregg area has been excessively heavy during the year, this area being the most active part of the field for the past five months. Pressures in this area have also been very high, but with the completion of several hundred wells the drainage of oil and gas has been rapid, and at the end of another 12 months an entirely different story may be told about this area. Pressures are expected to fall still faster within this period, regardless of holding the wells down to 71 bbls. per day per well, or less. There were 62 locations staked in north Gregg County this week, and 43 wells completed, giving an idea of the vast amount of activities carried on each week in this area, where drilling is the heaviest. There were 140 locations staked in the entire district, or only a little over twice the number staked in north Gregg alone. There were 115 wells completed in the district.

Activities have taken a spurt in the entire district, locations and completions having been registering around 80 each per week for the past several weeks, but last week activities increased, and this week another increase was shown by the location and completion reports. More new pipe is being sold in the district, and new pumping equipment has been installed on several leases, while still more has been ordered.

April 1 the Railroad Commission issued another cut per well allowable from 72 bbls. to 71 bbls. in order to keep the daily allowable down to 325,000 bbls.

Now 4,750 Wells

There are now 4,750 completed wells in the district, 63 of these reporting no production for one reason or another, several of them standing dead or waiting on pumping equipment. Pipe line runs for the 24 hours ending at 7 a.m. April 2 totaled 350,237 bbls., or over 24,000 bbls. more than production for that day, showing a continued demand for crude from this district.

More wells are showing water in the field, all of them being on the west or north edge, and necessitating chemicals or treating plants to knock out the water, different methods being used for this work. With 4,750 completed wells in the district, daily production would exceed the 325,000-bbl. daily allowable, but many of the wells will not make their allowable. Every 15 days a decrease in well allowable will be ordered by the commission, due to the number of wells being completed each week. However, the field may be given a larger allowable later if consumption gains, thereby aiding the producers and preventing cutting the daily well allowable to a drastic figure.

Wadley and others' No. 1 Oliver in the S. Sanders Survey, Upshur County, has been abandoned at a total depth of 3,882 feet. It had sand from 3,779-85 feet, but failed to register any production.

Rains County Test

Greer, McLaughlin and others' No. 1 Roy Harper, in the David Rose Survey, Rains County, one of the most interesting wildcats in the East Texas district, is drilling below 3,900 feet in Eagleford shale, base of the Austin logged at 3,810 feet, with the top checked at 3,490 feet. Surface elevation is 439 feet. At the present depth of drilling, having encountered no saturated sand or showing of oil, the test is considered as having small chances of making a producer from the Woodbine sand.

Pat Hudson has spudded on his No. 1 D. F. Smith in the Johnson Denson Survey, north and east of the Cranfill-Reynolds extension producer in Upshur County, and will make another interesting test for this area. McFarland's No. 1 Willie Starr, in the C. H. Hooper Survey, east of the extension producer, is still shut down at 3,250 feet.

The Humble Pipe Line Co. contracted to connect with Eslick's No. 1 Whitehurst extension producer of the Lathrop area, in the McKinney and Williams Survey, Upshur County, providing that the owners of the well would furnish 1½ miles of pipe. The pipe line company agreed to furnish labor and right of way for the line.

The Tidal Oil Co. is checking records preparatory to purchasing four leases in Rusk and Gregg Counties from the Danciger Oil & Refining Co. These leases are located in the W. W. Simms Survey, Rusk County, and Dolores Sanches Survey, and G. W. Hooper Survey in Gregg County. Seven wells are located on three of the tracts, and one tract is yet undrilled.

Wildcat Completions

There were four wildcat completions in the district during the week; one in Delta County, one in Hunt, one in Polk and one in Upshur County, thereby checking off considerable acreage in these counties from the possibilities of production. Only one wildcat location was staked in the district, in Cherokee County.

Purcell and others of Jefferson, in Cass County, have assembled a block of 5,500 acres centering around the D. Fraser Survey, west of the town of Avinger and have contracted to drill a test.

Joiner Petroleum Corp., H. L. Evans, and J. P. Purnell have been assigned an interest in the Pig and Davis block which centers around the A. H. Lattimer Survey, 14 miles northwest of Linden in Cass County and will resume drilling on the test which is now shut down at 2,860 feet.

Clark Brooks of Fort Worth has assembled a 3,750-acre block centering around the A. T. Branch Survey, 9 miles southwest of Waxahachie and will start a 3,000-foot test in 90 days.

A 10,000-acre block has been taken on the west side of Marion County and turned to the Kirby Petroleum Co., E. L. Smith Oil Co. and Adams and Lyle, and a test will be drilled in the near future. The block centers around the I. Johnson Survey. Benedum and Trees have taken a 4,500-acre block centering around the William Holloway Survey, approximately 2 miles south of the Sinclair Oil & Gas Co.'s dry hole on the McNeil estate in the R. B. Fowler Survey.

Van Zandt County

There was one location staked in the Van Field and two wells completed.

One of the most interesting features in the field for some time was the purchase of the Florey Oil Co.'s 8½ acres and two producing wells by the Humble Oil & Refining Co. for a reported consideration of $93,000. This gives the entire field to five companies, Pure Oil Co., Sun Oil Co., Shell Petroleum Corp., The Texas Company and Humble Oil & Refining Co. The Pure Oil Co. formerly purchased the other independent operator's holdings in the field. This was a small lease on the eastern edge of the field held by Broderick and Calvert of Fort Worth. One well had been completed on that tract. The Florey Oil Co.'s holdings were also on the eastern edge of the field, or in what is known as the

EAST AND EAST CENTRAL TEXAS WILDCATS

Week Ending April 4

ANDERSON COUNTY

Company, well, farm name, section and block—	Remarks:
C. R. Wilmuth et al's No. 1 N. B. Watson, 500 ft. from W line and 4,850 ft. from N of S line of survey in 8½ of 129-ac. tract, M. Main Sur.	T. D. 1,538 ft.

ANGELINA COUNTY

Helburt et al's No. 1 Long Bell Lumber Co., 160 ft. from S line and 200 ft. from E line of Sec. 9, H.&T.B. Sur.	Location.

BOWIE COUNTY

Burnham-Robertson and Greer's No. 1 F. O. Weiss, 850 ft. from N line and 200 ft. from W line of B. H. Williams 50-ac. tract, Jessie Dean Sur.	Set csg.; T.D. 127 ft.

CHEROKEE COUNTY

Bridges and Candler's No. 1 Berryman, center of Berryman tract, H. Kimble Sur.	S.D. 1,000 ft.
V. Clopton & Hawkins' No. 1 A. P. Pace, 288 ft. from N line and 330 ft. from most northerly E line of 40-ac. lease, W. Dikes Sur.	Showed 22 joints of oil and 7 bbls. salt water; will abandon.
Harper and Perkinson's No. 1 J. T. Lowery, 650 ft. from N line, 150 ft. from W line of Blk. No. 5 on a 139.6-ac. tract, 4 miles W of Troupe, C. B. Jennings Sur.	Drlg. 3,160 ft.
Merry Bros. and Perini's No. 1 Annie Kelley, 330 ft. from N line and 443 ft. from E line of 393-ac. tract and 90-ac. lease, M. De Los Santos Coy Sur.	T.D. 3,679 ft.; set csg.
Mid-Kansas Oil & Gas Co.'s No. 1 H. D. Kelley, 330 ft. from S line and 537 ft. from E line of lease, M. De Los Santos Sur.	Rig.
Mid-Kansas Oil & Gas Co.'s No. 9 M. M. Cross, 1,540 ft. from N line of Cherokee County and 537 ft. from W line of lease, Fowlks Sur.	Derrick.
Mustang Oil Co.'s No. 1 Decker and Whiteman, east side of W 75 acres of S 150 acres of survey, 3 miles S of Maydelle, F. W. Fulgham Sur.	Derrick.
Patton-Liver and Murray's No. 1 Eddie Toole, center of one-half-acre tract, 6 miles E of Troupe, De Los Santos Sur.	Rig up.

(Continued on Page 59)

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National seamless external *upset* tubing

ESPECIALLY FOR DEEP WELLS, CROOKED HOLES AND OTHER ADVERSE CONDITIONS

THE seamless walls of NATIONAL A. P. I. External Upset Tubing, together with its heavy upset ends give extra strength and security where most needed—all its visible features plainly denote correct balance of metal against stress, for every demand of service. There are no welds to open under strain and concentration of wear or from the cutting action of sucker rods. The thickened ends afford abundant wearing metal, force any bending away from the joints, and give increased resistance to the crushing action of the coupling—an important safeguard where tubing is to be made up and broken down again and again.

Especially in the deeper wells, in crooked holes and wherever drilling conditions are most severe, this dependable tubing is a standby of operating men. In working with it, they find an extra measure of security against grief and loss. Their experience, in every field, East or West, has made it—

America's Preferred Tubing

NATIONAL TUBE COMPANY

Frick Building, Pittsburgh, Pa.

SUBSIDIARY OF UNITED STATES STEEL CORPORATION

American Bridge Company
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Cyclone Fence Company
Federal Shipbuilding and Dry Dock Company
Illinois Steel Company
Minnesota Steel Company
National Tube Company
The Lorain Steel Company
Tennessee Coal, Iron & R. R. Company
Universal Atlas Cement Company

Carroll district, outside of the Van Joint Account.

On April 5 a request is to be made to the Railroad Commission for an increase in daily allowable for the Van Field, from 50,000 bbls. to 75,000 bbls. This request will be based on the heavy thickness of sand in the field.

Daily average oil shipments from East Texas, week ending March 28:

SHIPMENTS THROUGH MAIN TRUNK LINES

Company, size and location—	Amt.
Arkansas P. L. Corp., 8-in., Shreveport	16,185
Atlantic P. L. Co., 10-in., Atreco	18,852
Atlas P. L. Co., 8-in., Shreveport	4,064
Gulf P. L. Co., 2 and 8-in., Oklahoma	19,225
Gulf P. L. Co., 2 and 8-in., Port Arthur	12,658
Humble P. L. Co., 2 and 10-in., Shreveport	33,719
Humble P. L. Co., 2 and 8-in., Todd	47,698
Liberty P. L. Co., 8-in., Rusk	2,126
Magnolia P. L. Co., 10-in., Center	18,962
Magnolia P. L. Co., 12-in., Corsicana	29,927
Shell P. L. Corp., 10-in., Houston	24,789
Sinclair Texas P. L. Co., 12-in., Teague	20,374
Sun-Yount Lee P. L. Co., 10-in., Sun City	35,142
Texas P. L. Co., 10-in., Douglass	22,570
Texas Empire P. L. Co., 12-in., Port Arthur	34,781
Tidal Ref. Co., 6-in., Carthage	2,926
Total	344,008

SHIPMENTS TO REFINERIES

Arrow Ref. Co., Overton	S.D.
Beacon Ref. Co., Henderson	682
Boone Ref. Co., Arp	650
Central Ref. Co., Friars Switch	S.D.
Constantin Ref. Co., Overton	S.D.
Diamond Ref. Co., Overton	661
East Texas Ref. Co., Longview	9,060
East Texas Ref. Co., Friars Switch	S.D.
Gladetex Ref. Co., Gladewater	275
Gladewater Ref. Co., Gladewater	400
Guillory Ref. Co., Kilgore	75
Kilgore Ref. Co., Kilgore	487
Overton Ref. Co., Overton	692
Petroleum Refractionating Co., Longview	S.D.
Sinclair Oil & Gas Co., Longview	127
Slack Ref. Co., Camps Switch	S.D.
Southern Oil Ref. Co., Reed Switch	S.D.
Taylor Ref. Co., Tyler	907
V. O. E. Ref. Co., Gladewater	S.D.
Total	13,956

SHIPMENTS BY TANK CAR

Tyler P. L. Co. from Tyler	123
Total	123
Total daily average distribution	358,087
Total daily average production	331,051
Daily average from storage	27,036

COMPLETIONS IN EAST TEXAS

Delta County

Commerce Development Co.'s No. 1 Ablowich, dry and abandoned, total depth 3,315 feet.

Gregg County

Amerada Petroleum Co.'s No. 5 Killingsworth, top sand 3,602 feet, initial production 152 bbls. per hour through 1-inch tubing choke, total depth 3,639 feet. Arkansas Fuel Oil Co.'s No. 3-A McKinley, top sand 3,585 feet, initial production 117 bbls. in one-half hour through open tubing, total depth 3,614 feet; No. 2-A McPherson, top sand 3,520 feet, initial production 55 bbls. in one-fourth hour through open tubing, total depth 3,544 feet. Atlantic Oil & Production Co.'s No. 5 Duncan, top sand 3,637 feet, initial production 22 bbls. per hour through tapered tubing, total depth 3,703 feet; No. 3 Fuller, top sand 3,670 feet, initial production 63 bbls. per hour through tapered tubing, total depth 3,709 feet.

Barnsdall Oil Co.'s No. 1 Adams, top sand 3,589 feet, initial production 159 bbls. per hour through 1-inch tubing choke, total depth 3,659 feet; No. 4 R. E. L. Ferguson, top sand 3,613 feet, initial production 89 bbls. per hour through 1-inch tubing choke, total depth 3,641 feet. Bristow & Rowan's No. 2 W. A. Moore, top sand 3,517 feet, initial production 72 bbls. in 45 minutes through 1-inch tubing choke, total depth 3,560 feet. Cal-Pet Corp.'s No. 3 Tuttle, top sand 3,514 feet, initial production 146 bbls. per hour through 1-inch tubing choke, total depth 3,535 feet. Chaplin & Bass' No. 2 G. T. Mattox, top sand 3,621 feet, initial production 65 bbls. per hour through open tubing, total depth 3,628 feet. Cranfill & Reynolds' No. 3 J. B. Burton, location abandoned.

Darby Petroleum Co.'s No. 3 Clemmons, top sand 3,592 feet, initial production 37 bbls. in one-fourth hour through open tubing, total depth 3,617 feet; No. 4 Ritchey, top sand 3,530 feet, initial production 23 bbls. in 10 minutes through open tubing, total depth 3,560 feet.

Demotte and others' No. 1 T. L. Bray, top sand 3,622 feet, initial production 45 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,642 feet. Devonian Oil Co.'s No. 3 Ingram, top sand 3,521 feet, initial production 96 bbls. in 30 minutes through open tubing, total depth 3,581 feet. East Texas Refining Co.'s No. 4 Hindman, top sand 3,600 feet, initial production 98 bbls. in 30 minutes through open tubing, total depth 3,620 feet. East Texas Shore Line Co.'s No. 1 J. C. Walters, abandoned, total depth 3,410 feet. Lost hole. Fain and McGaha's No. 2 A. Tooke, top sand 3,561 feet, initial production 18 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,517 feet.

Gulf Production Co.'s No. 2 M. F. Barker, top sand 3,568 feet, initial production 120 bbls. per hour through three-fourths inch tubing choke, total depth 3,588 feet; No. 4 A. Neeley, top sand 3,508 feet, initial production 130 bbls. per hour through three-fourths inch tubing choke, total depth 3,530 feet. Harry Hamberry and others' No. 3 F. L. Bray, top sand 3,630 feet, initial production 25 bbls. in 15 minutes through three-fourths inch tubing choke, total depth 3,655 feet. J. N. Hayner's No. 2 Tenery, top sand 3,633 feet, initial production 102 bbls. per hour through three-fourths inch tubing choke, total depth 3,634 feet. Heyser and Heard's No. 3 Thrasher and Stuckey, top sand 3,563 feet, initial production 72 bbls. in 40 minutes through three-fourths inch tubing choke, total depth 3,608 feet. Humble Oil & Refining Co.'s No. 4 Armstrong, top sand 3,548 feet, initial production 110 bbls. per hour through three-fourths inch tubing choke, total depth 3,584 feet.

Jackson and Bradstreet's No. 1 M. Young, top sand 3,565 feet, initial production 48 bbls. in 15 minutes through open tubing, total depth 3,525 feet. King and Massingale's No. 2 E. E. Anderson, top sand 3,611 feet, initial production 90 bbls. per hour through three-fourths inch tubing choke, total depth 3,641 feet. Lucey Petroleum Co.'s No. 2 R. Christian, top sand 3,598 feet, initial production 110 bbls. in 30 minutes through open tubing, total depth 3,648 feet; No. 4 McBee Fisher, top sand 3,498 feet, initial production 24 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,542 feet.

Magnolia Petroleum Co.'s No. 4 M. Dyer, top sand 3,552 feet, initial production 232 bbls. per hour through open tubing, total depth 3,619 feet. O. G. Murphy's No. 4 Doby, top sand 3,520 feet, initial production 92 bbls. in 30 minutes through open tubing, total depth 3,567 feet. Reynolds and Kimberlin's No. 1 M. Daniel, top sand 3,582 feet, initial production 40 bbls. in 30 minutes through 1-inch tubing choke, total depth 3,624 feet. Roeser and Pendleton's No. 2-A W. R. Nicholson, top sand 3,649 feet, initial production 180 bbls. per hour through open tubing, total depth 3,670 feet. Rowan and Nichols' No. 2-A Todd, top sand 3,549 feet, initial production 98 bbls. in 30 minutes through open tubing, total depth 3,610 feet.

Selby and Lewis' No. 3-C Snavely heirs, top sand 3,558 feet, initial production 280 bbls. per hour through open tubing, total depth 3,585 feet. Shell Petroleum Corp.'s No. 6 J. Moore, top sand 3,555 feet, initial production 20 bbls. in 30 minutes through tapered tubing, total depth 3,570 feet. Lewis Sikes and others' No. 3 G. W. Stencil, top sand 3,684 feet, initial production 25 bbls. in 15 minutes through 1-inch tubing choke, total depth 3,709 feet. Silver Star Oil Co.'s No. 1 Thad Snoddy, top sand 3,565 feet, initial production 72 bbls. in 40 minutes through 1-inch tubing choke, total depth 3,598 feet. Sinclair Oil & Gas Co.'s No. 5 M. Lawson, top sand 3,508 feet, initial production 72 bbls. in 20 minutes through open tubing, total depth 3,536 feet. Stanolind-Simm and others' No. 4 Albright, top sand 3,554 feet, initial production 58 bbls. in 15 minutes through open tubing, total depth 3,626 feet. Sun Oil Co.'s No. 4 Gray, top sand 3,599 feet, initial production 40 bbls. per hour through open tubing, total depth 3,635 feet. W. F. Turner's No. 5 A. Jones, top sand 3,583 feet, initial production 160 bbls. per hour through 1-inch tubing choke, total depth 3,624 feet. J. C. Whittington's No. 3 Bumpass, top sand 3,530 feet, initial production 60 bbls. in 35 minutes through 1-inch tubing choke, total depth 3,590 feet.

Yount-Lee Oil Co.'s No. 4-A Ike Deason, top sand 3,599 feet, initial production 95 bbls. per hour through eleven-sixteenths inch tubing choke, total depth 3,619 feet. Boxtex Oil Corp.'s No. 2 A. Spear, top sand 3,551 feet, initial production 50 bbls. in 15 minutes through 2-inch tubing choke, total depth 3,572 feet. Byrd-Frost Oil Co.'s No. 1 A. Strong, top sand 3,682 feet, initial production 72 bbls. per day pinched, total depth 3,619 feet. Central Com. Oil Co.'s No. 2 A. A. King, top sand 3,722 feet, initial production 105 bbls. per hour through open tubing, total depth 3,725 feet. Golding and Murchinson's No. 5 L. P. Griffin, top sand 3,536 feet, initial production 95 bbls. in 30 minutes through 1-inch tubing choke, total depth 3,562 feet.

Gulf Production Co.'s No. 6 Culver, top sand 3,546 feet, initial production 78 bbls. per hour through three-fourths inch tubing choke, total depth 3,572 feet; No. 6 Muckelroy, top sand 3,559 feet, initial production 87 bbls. per hour through three-fourths inch tubing choke, total depth 3,570 feet; No. 2 R. H. Still, top sand 3,498 feet, initial production 70 bbls. per hour through three-fourths inch tubing choke, total depth 3,514 feet. J. F. Heard's No. 1 fee, location abandoned. E. B. Hopkins and others' No. 2 Watson, location abandoned. Imperator Oil Co.'s No. 1 M. T. Cole, top sand 3,532 feet, initial production 62 bbls. in 30 minutes through open tubing, total depth 3,547 feet. Island Oil Co.'s No. 1 J. A. Knowles, top sand 3,588 feet, initial production 40 bbls. in 30 minutes through open tubing, total depth 3,604 feet. C. L. McMahon's No. 2 Joe King, top sand 3,638 feet, initial production 72 bbls. per day through various chokes, total depth 3,643 feet.

Magnolia Petroleum Co.'s No. 4 John Redford, top sand 3,722 feet, initial production 180 bbls. per hour through 2½-inch tubing choke, total depth 3,728 feet. National Oil Co.'s No. 1 L. Martin, top sand 3,732 feet, initial production 72 bbls. per day pinched, total depth 3,735 feet. F. W. O'Byrne's No. 1-A W. Daniels, top sand 3,531 feet, initial production through 1-inch tubing choke, 32 bbls., 10 minutes, total depth 3,587 feet. Patrick Petroleum Co.'s No. 1 J. B. Watson, top sand 3,575 feet, initial production 25 bbls. in 20 minutes through 1-inch tubing choke, total depth 3,636 feet. R. C. Rochello's No. 1 George Walters, top sand 3,541 feet, initial production 72 bbls. per day pinched, total depth 3,572 feet. Prairie Oil & Gas Co.'s No. 2 H. J. Thomas, top sand 3,720 feet, initial production 107 bbls. per hour through three-fourths inch tubing choke, total depth 3,722 feet.

Shell Petroleum Corp.'s No. 2 B. F. Laird, top sand 3,553 feet, initial production 16½ bbls. in 30 minutes through tapered tubing, total depth 3,587 feet; No. 1 M. J. Register, top sand 3,644 feet, initial production 15 bbls. in 30 minutes through tapered tubing, total depth 3,662 feet. Sinclair Oil & Gas Co.'s No. 5 S. G. Andrews, top sand 3,433 feet, initial production 72 bbls. in 30 minutes through open tubing, total depth 3,472 feet; No. 13-A A. King, top sand 3,517 feet, initial production 72 bbls. in 30 minutes through open tubing, total depth 3,547 feet. Harry H. Holden's No. 1 Register, top sand 3,668 feet, initial production 72 bbls. in 30 minutes through open tubing, total depth 3,677 feet. Sun Oil Co.'s No. 2 C. Brown, top sand 3,615 feet, initial production 72 bbls. per day pinched, total depth 3,655 feet. Paul Doran and others' No. 1 Samples, top sand 3,743 feet, initial production 72 bbls. per day pinched, total depth 3,749 feet.

Tidal Oil Co.'s No. 2 Tom Bell, top sand 3,693 feet, initial production 60 bbls. per hour through open casing and tubing, total depth 3,693 feet. Trapshooter Riley's No. 3 Mitchell, top sand 3,584 feet, initial production 41 bbls. in 15 minutes through open tubing, total depth 3,609 feet. Universal Oil Co.'s No. 1 Adkins, top sand 3,697 feet, initial production 72 bbls. per day pinched, total depth 3,703 feet.

Hunt County

Russell and others' No. 1 Brooks and Quattlebaum, dry and abandoned, total depth 1,550 feet.

Polk County

Humble Oil & Refining Co.'s No. 2-A West Texas Lumber Co., dry and abandoned, total depth 1,568 feet.

Rusk County

DeArmon Brothers' No. 4 King, location abandoned. Devonian and Gulf Production Co.'s No. 12 Motley, top sand 3,715 feet, initial production 100 bbls. per hour through three-fourths-inch tubing choke, total depth 3,722 feet. P. T. Fullwood's No. 1 W. N. Brightwell, top sand 3,596 feet, initial production 72 bbls. per day pinched, total depth 3,622 feet. Gulf Production Co.'s No. 5-A C. E. Christian, top sand 3,652 feet, initial production 82 bbls. per hour through three-fourths-inch tubing choke; No. 12-C C. E. Christian, top sand 3,712 feet, initial production 52 bbls. per hour through three-fourths-inch tubing choke, total depth 3,721 feet. William F. Hollifield's No. 2 J. Wooley, top sand 3,677 feet, initial production 72 bbls. per day pinched, total depth 3,725 feet. Humble Oil & Refining Co.'s No. 2 J. T. Robertson, top sand 3,588 feet, initial production 49½ bbls. per hour through three-fourths-inch tubing choke, total depth 3,739 feet. Jackson-Wise & Markham's No. 3 C. O. Christian, top sand 3,748 feet, initial production 72 bbls. per day through various chokes, total depth 3,760 feet. K. P. Oil Co.'s No. 4 Brock Estate, top sand 3,648 feet, initial production 72 bbls. per day through pinched tubing, total depth 3,654 feet. Kirby Petroleum Co.'s No. 3 J. Reddie, top sand 3,595 feet, initial production 72 bbls. per day pinched, total depth 3,703 feet.

Luling Oil & Gas Co.'s No. 2-A W. N. Brightwell, top sand 3,596 feet, initial production 72 bbls. per day, total depth 3,626 feet. Turman Oil Co.'s No. 5-B W. J. Brightwell, top sand 3,614 feet, initial production 72 bbls. per day pinched, total depth 3,674 feet. Weaver-Crim Corp.'s No. 1 M. E. Peterson, top sand 3,650 feet, initial production 90 bbls. per hour through 1-inch tubing choke, total depth 3,652 feet. Carroll & McIntyre's No. 1 G. A. Dickerson, top sand 3,606 feet, initial production 5 bbls. in 10 minutes through open 2-inch tubing choke, total depth 3,675 feet. Central Oil Corp.'s No. 1 E. B. Alford, top sand 3,554 feet, initial production 80 bbls. per hour through open 2-inch tubing choke, total depth 3,630 feet. E. L. Chapman's No. 2-B Finney, top sand 3,641 feet, initial production 50 bbls. per hour through open tubing, total depth 3,710 feet. Jim Cloud's No. 3 Samp Stone, top sand 3,645 feet, initial production 60 bbls. in one-half hour through open tubing, total depth 3,620 feet. Barney Cockburn's No. 2 Nathan Green, top sand 3,803 feet, initial production 75 bbls. in one-half hour through open tubing, total depth 3,805 feet.

Combined Oil Interests' No. 6 G. W. Eaton, top sand 3,698 feet, initial production 160 bbls. per hour through open tubing, total depth 3,713 feet. Gulf Production Co.'s No. 2 C. F. O'Quinn, top sand 3,761 feet, initial production 77 bbls. per hour through three-fourths-inch tubing choke, total depth 3,771 feet; No. 2 G. W. Shaw, top sand 3,703 feet, initial production 75 bbls. per hour through three-fourths-inch tubing choke, total depth 3,711 feet; No. 3 Samp Stone, top sand 3,632 feet, initial production 70 bbls. per hour through three-fourths-inch tubing choke, total depth 3,649 feet; No. 8 G. G. Turner, top sand 3,727 feet, initial production 75 bbls. per hour through three-fourths-inch tubing choke, total depth 3,744 feet. Humble Oil & Refining Co.'s No. 4 Charles Pilgreen, top sand 3,693 feet, initial production 41 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,785 feet; No. 3 J. J. Pitner, top sand 3,654 feet, initial

(Continued on Page 77)

Four 95,000 Barrel Pipe Line Stations *use* O.L. MULTIPLEX PUMPS

FOUR OF THE largest centrifugal pipe line stations in the world on the Troup-Mexia line of the Sinclair Texas Company are all equipped with Byron Jackson O.L. Multiplex Pumps. The photograph here is of the pumping station at Troup, Texas, equipped with two 6″, 3-stage O.L. Multiplex Pumps with 500 HP motors and two 4″, 4-stage O.L. Multiplex Pumps driven by 250 HP motors. This station has a capacity of approximately 95,000 barrels of crude oil per day at 775# pressure. It is significant that these sixteen O.L. Multiplex Pumps represent several repeat orders.

Engineers everywhere are recognizing the outstanding performance of Byron Jackson O.L. Multiplex Pumps for pipe line service.

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BYRON JACKSON

CENTRIFUGAL PUMPS FOR EVERY SERVICE

Testing Western End of North Dome

Three Tests Being Drilled Between Blue and Red Lines and One Beyond Blue Line at Kettleman Hills. May Extend Field

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Apr. 2.—Crude oil production in California, which dropped last week to 493,000 bbls. per day, the lowest level reached in several years, bounded back this week to within striking distance of the 500,000-bbl. mark. The increase in production was due to a readjustment at Kettleman Hills where operators were making up underages occasioned by a reduction of production to 56,750 bbls. per day during the previous week. A similar situation prevailed in the Midway-Sunset area where production was below normal for the entire week. Operators in this field are following the policy of suspending pumping operations during the latter part of each month after they have produced their current allotment. This causes notable changes in production whenever these wells go on or come off production.

State production at the close of March was about on a par with the output on March 1, although during the intervening period the tendency was toward a slightly lower level. The Coalinga Field, due to the resumption of partial production by the Shell Oil Co., increased from 7,197 bbls. on March 1 to 9,738 bbls. on March 31, an increase of 2,541 bbls. in daily production. Ventura Avenue during the same period recorded a decrease of 5,204 bbls., production having been reduced from 35,774 bbls. on March 1 to 30,575 bbls. at the close of the month. Production at Mount Poso was reduced from 8,984 bbls. to 6,138 bbls. between the first and end of March. The Round Mountain Field in Kern County, on the other hand, increased from 2,643 bbls. to 3,551 bbls. per day during the same period. The Kern River Field was reduced approximately 3,000 bbls. per day, practically all of this reduction being out on the West Front. The Long Beach Field produced 79,495 bbls. on the last day of March, compared with 76,280 bbls. per day on March 1 and 73,905 bbls. per day on February 1, Production at Santa Fe Springs did not show any change between the first and end of March, the daily average for these two periods being 65,690 bbls. and 65,682 bbls. per day respectively.

Curtailment Work

Earl B. Gilmore, president of the Gilmore Oil Co., who was appointed a week or so ago as a mediator in the controversy over enforcement of the gas conservation law in the Santa Fe Springs Field, is working on a plan which contemplates a more effective curtailment pending the termination of the status of the Sharkey bill, which, if ratified at the special election May 3, will render the gas conservation law inoperative by mutual consent. The gas law will still remain on the statute books but will not be enforced if the Sharkey oil conservation measure is upheld by the vote on May 3. Mr. Gilmore's plan is predicated on the assumption that operators will abide by an honest curtailment and a conference has been called for the purpose of determining the attitude of individual producers.

The special representative of Governor Rolph has proposed that a wide-open production test be conducted of all wells in the Santa Fe Springs Field, at the conclusion of which operators will be assigned a definite allotment. Unless operators have shown a change of heart, this proposed mutual curtailment will not be any more successful than previous attempts. It may be possible of course that operators, realizing that the State Department of Natural Resources is in a position to enforce the gas conservation law, will be willing to make the necessary curtailment. If the state proceeds to enforce the gas conservation law at Santa Fe Springs it may result in a complete shutdown of several properties which have produced more than their prorata share of oil and gas. The suit instituted by the state, based on the correlative rights of all producers in a common pool, was recently taken off the calendar but may possibly be reinstated if the Sharkey bill fails of passage at the special election May 3. The attempt now under way to re-establish potentials and reallocate the allowable production of each producer in the Santa Fe Springs Field is a final attempt to effect equitable curtailment and thus hold back enforcement of the gas conservation law. Operators should remember this curtailment is being sponsored by a representative of Governor Rolph and that if they fail to adhere to Mr. Gilmore's allotment they automatically open the way for enforcement of the gas conservation law if the Sharkey bill is defeated next month.

Gas Waste Reduced

A substantial reduction was effected in the amount of gas blown to the air in California during February. During this period 1,705,255,000 feet of gas was dissipated to the air, compared with a wastage of 2,344,471,000 feet during the previous month. The waste at Kettleman Hills during February, however, exceeded that reported during January, as 588,681,000 feet were blown to the air during the former period and 303,118,000 feet during the latter. This substantial increase in the amount of gas wasted at Kettleman Hills stands out very prominently because there was less gas produced during February. The Pacific Gas & Electric Co. picked up 1,238,649,000 feet of gas from Kettleman Hills during February, while the Southern Counties Gas Co. and the Southern Fuel Co. purchased 394,443,000 feet and 858,480,000 feet respectively. During February, 12,387,655 gallons of casinghead was recovered by natural gasoline plant operators, compared with a recovery of 13,909,647 gallons during January.

Ventura Avenue

The Superior Oil Co. finished the Bolsa Chica's No. 6 Hartman, a new well in the Ventura Avenue Field during the past week, and this well, bottomed at 8,611 feet and subsequently plugged back to 7,872 feet because of bottom water, was brought in flowing 864 bbls. of clean 30.2 gravity oil per day. The Associated, which is running six strings of tools in the Ventura Avenue Field, will probably finish three wells during April. In No. 83 Lloyd, bottomed at 8,600 feet, the Associated landed the longest string of 7-inch 30-pound casing which has been cemented in any California field. The 7-inch casing used in this well was landed and cemented at 8,588 feet. In January, 1930, the Associated established another pipe record when it landed and cemented 5,578 feet of 13⅜-inch casing in its No. 1 Whepley, in the North Dome of Kettleman Hills.

In the Rincon Field of Ventura County, the General Petroleum recompleted No. 2 on Needham tideland permit No. 55 after plugging back from 7,334 feet to 3,012 feet. This well was returned to production pumping 259 bbls. of 27.1 gravity oil cutting 7 per cent. The Elwood Field of Santa Barbara County is devoid of any drilling operations at present and, while there have been rumors of a resumption of development work, officials of the Barnsdall, Bankline and other operators deny the probability under present conditions. The drilling moatorium now in effect at Elwood was effected immediately subsequent to the discovery of a new deep zone in the Elwood Field by the Barnsdall and Rio Grande last year. In consideration of this constructive movement, the Operators General Committee on Statewide Curtailment granted a special dispensation permitting operators in the Elwood Field to produce 15,000 bbls. per day. This is approximately 5,000 bbls. in excess of the daily allotment assigned the Elwood Field which, exclusive of the deep zone, has a potential rating of 20,200 bbls. per day. The Barnsdall and Rio Grande's deep zone discovery well, No. 14 Bell Luton, is standing shut in under a pressure of 650 pounds. This well definitely indicated the existence of substantial production in the Sespe formation immediately underlying the present productive Vaqueros.

Santa Maria

The Union Oil Co. has started rig construction for No. 51 Newlove, a new well to be drilled in the Santa Maria Field of Santa Barbara County. A power line is being strung and present plans contemplate the starting of actual drilling operations within 10 days. This hole is being drilled for the primary purpose of obtaining a complete core record of all zones in the field and not because of any desire to stimulate production. The Union has been reconditioning many of its producing wells in the Santa Maria Field and it is the present intention to rejuvenate this area so that commercial production may be developed when the occasion arises. A careful check has been made to determine the effectiveness of all cement jobs in order to prevent infiltration of water into the productive formations. Repressuring operations have been under way for practically an entire year and the outcome is expected to be signally successful. The Union is particularly fortunate in its extensive holdings in this field as it controls practically all of the potentially productive acreage and consequently has a substantial reserve in this area.

Fruitvale

Two new wells were chalked up in the Fruitvale Field of Kern County and a check indicates the probable completion of two or three more during the next 10 days. The Plymouth Oil Co. increased its list of producers in this field by completing No. 2 Fairhaven flowing 330 bbls. of 22.1 gravity oil per day from 3,846 feet, the hole having been finished with an 8⅝-inch water string cemented at 3,665 feet and a 6⅝-inch liner carrying 185 feet of perforated. The other well finished in the Fruitvale Field was the Bankline Oil Co.'s No. 1 in Section 21-29-27, which came in under a natural flow doing 513 bbls. of 22.2 gravity oil per day. This well, bottomed at 4,044 feet and finished with an 8⅝-inch water string landed and cemented at 3,836 feet, is flowing through a 4¾-inch liner carrying 208 feet of perforated and 3,797 feet of 2½-inch tubing. The Western Gulf Oil Co., discoverer of the Fruitvale Field of Kern County, should finish two new wells during the next 10 days as No. 1 Carpenter and No. 1 Rea are both standing cemented in the oil sand. In addition the company has the bit rotating in No. 11 Kern County land at 3,310 feet and has material on ground for No. 1 Price-Stewart. The Bluerock Oil Co. should also list a new completion in the near future as it is being rigged up to pump, following the failure to come in under a natural flow. The Mohawk Oil Co. and the Sea Hawk, both of which have wells rotating below the 3,400-foot level, should add new wells.

Belridge

The Belridge Oil Co. has landed a string of 8⅝-inch casing in its No. 64, in the North Belridge Field in Section 27-27-20, preparatory to an early production test. This well, bottomed at 8,030 feet, is one of the most important tests being drilled in the San Joaquin Basin. If the Kreyenhagen is found productive in the North Belridge Field it should likewise be productive at Kettleman Hills and possibly in other San Joaquin Valley fields. The Standard Oil Co. developed a little production in the Kreyenhagen at Devil's Den. Production in this area, while not commercially profitable, revealed the existence of oil in the Kreyenhagen. This tends to indicate the Kreyenhagen in the Kettleman Hills and Belridge Fields is oil bearing, although it will not be definitely determined whether this formation will be found commercially productive until it is given a production test. The Belridge Oil Co. is withholding the exact status of its deep test in the North Belridge Field but information has leaked out that the company has penetrated approximately 200 feet of what appears to be a solid oil sand. It will be recalled this well got away from the crew a few months ago

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	Mar. 19, 1932		Mar. 12, 1932			
Intercoastal-Domestic	Total this week	Daily acerage	Total last week	Daily average	This year to date	Same time last year
Diesel and gas oil	.....	.....	46,225	6,604	46,225	679,024
Gasoline	520,679	74,383	137,480	19,640	1,356,904	3,442,526
Foreign Exports—						
Crude oil	213,934	30,562	168,813	24,116	2,053,653	1,569,779
Fuel oil	226,707	32,387	214,694	30,671	2,171,109	3,257,766
Diesel and gas oil	2,860	409	11,437	1,634	457,240	809,399
Gasoline	163,423	14,775	279,988	39,998	2,069,640	2,128,765
Kerosene	.....	.....	117,734	16,819	569,904	305,814
Lubricants	.....	.....	.....	.....	.....	6,928
Naphtha distillates	.....	.....	.....	.....	41,175	.....
Coastwise-Domestic—						
Crude oil	250,853	37,265	175,590	25,084	3,278,287	4,532,463
Fuel oil	278,461	39,779	156,536	22,362	3,352,837	3,675,581
Diesel and gas oil	5,675	811	28,573	4,082	403,206	395,113
Gasoline	351,460	50,209	133,665	26,952	3,013,496	2,480,964
Kerosene	5,232	747	.....	.....	38,304	166,471

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal—Domestic—						
Gasoline	.....	.....	.....	.....	68,101	63,975
Lubricants	.....	.....	.....	.....	7,849	11,000
Foreign Exports—						
Crude oil	147,507	21,072	22,365	3,195	418,965	6,010
Fuel oil	.....	.....	.....	.....	442,083	198,876
Diesel and gas oil	.....	.....	35,334	12,191	250,991	127,617
Gasoline	.....	.....	.....	.....	607,815	710,363
Kerosene	.....	.....	.....	.....	185,350	190,412
Lubricants	.....	.....	.....	.....	4,235	.....
Coastwise-Domestic—						
Fuel oil	.....	.....	.....	.....	464,500	925,298
Diesel and gas oil	13,740	1,963	13,177	1,882	163,616	15,134
Gasoline	34,160	4,880	10,094	1,442	718,508	565,868
Kerosene	.....	.....	.....	.....	10,857	23,829

and blew over the crown block for several hours. No black oil was in evidence during this short demonstration, although field men are of opinion the mist which was precipitated consisted of water and a water white condensate similar to the white oil produced from the upper or Elliott zone in the north dome of Kettleman Hills. The Belridge Oil Co.'s deep test in the North Belridge Field of Kern County will bear watching during the next few weeks as it looks unusually interesting and may change the existing opinion regarding the possible productiveness of the Kreyenhagen in the San Joaquin Valley.

Kettleman Hills

Although drilling operations in the North Dome of Kettleman Hills have undergone a substantial reduction during the past several months, it is probable three or four new wells may be completed during April. These potential producers are being drilled by the Kettleman North Dome Association, which has seven wells tentatively scheduled for completion before the close of May. All but one of these are below the 7,200-foot level at the present time. Kettleman Hills has a potential daily production of 285,000 bbls. at present but this rating will exceed 300,000 bbls. per day by the end of April if the Kettleman North Dome Association successfully finishes its two new producers scheduled for completion during this period. It should be increased by the completion of additional projects now under way and may reach 350,000 bbls. per day at the close of May or early in June.

Aside from interest which attaches to the drilling of new wells in proven territory, operators are manifesting considerable interest in exploration work under way in the extreme western end of the structure. This interest lies in the fact that the limits of production will be extended westward if any of them should develop commercial production. Four wells are already either drilling or scheduled to begin making hole in the western end of the North Dome at present. These four outposts are of primary importance as three of them are located between the blue and the red lines and one out even beyond the blue line. The latter project is No. 1 Lillis Welch of the North Kettleman Oil & Gas Co., the most westerly project to be started in the Kettleman Hills Field up to the present. Between the red line, which encloses the proven acreage in the North Dome, and the blue line, which establishes the maximum outer limits of production, the Standard is building rigs for two new wells to be drilled in Section 19-21-17, and the Kettleman North Dome Association is drilling on one test in the adjoining section to the east. If the North Kettleman Oil & Gas Co. successfully develops commercial production in No. 1 Lillis Welch it will increase the proven acreage of the north dome by at least 1,200 acres. The Standard will benefit by having over 640 acres proven up if No. 1 Lillis Welch is commercially productive, while the Kettleman North Dome Association will add at least an equal amount.

Dominguez

Although there were no completions in the Dominguez Field during the week, operators will probably make up for lost time during the next 10 days. The Union has three wells rotating in the oil sand and is drilling in another well at 2,500 feet. The Shell is making preparations to complete No. 42 Reyes some time during the middle of April and has started rig construction for a new well, No. 43 Reyes. The Republic Petroleum has just spudded in its initial well on the Child's property, which it recently acquired. The Shell drilled several deep tests on the Child's property but failed to get commercial production due to edgewater. J. E. O'Donnell has temporarily suspended drilling operations on his No. 2 Dominguez due to the inability to mill through a fish in the bottom of the hole at 4,447 feet. The Associated recovered the liner which froze in No. 5 DeFrancis and a 4¾-inch combination string has been landed on bottom at 4,500 feet and cemented through perforations at 4,390 feet.

The week was a rather uneventful one so far as the Inglewood Field was concerned as all of the three deep tests being drilled around the edge of the structure were either idle or standing cemented. The Baldwin Oil Co. has just started drilling out in its No. 9 Brownmoor, following the landing and cementing of a string of 12½-inch casing at 1,390 feet. No. 1 Sentous of the Baldwin Hills Syndicate is temporarily suspended following an unsuccessful cement job on the 8⅝-inch water string landed and cemented at 3,993 feet. The Allison Syndicate, which failed to secure commercial production in No. 1 Moynier at 6,110 feet, has pulled the tubing and is cleaning out preparatory to a resumption of drilling.

Seal Beach

The Continental Oil Co. successfully finished No. 26 Selover, a new well in the Seal Beach Field, and this project, bottomed at 6,345 feet and subsequently plugged back to 6,306 feet, was swabbed in flowing 405 bbls. of clean 29.9 gravity oil per day. The Standard is working on two wells on the San Gabriel lease in the Seal Beach Field and both should be finished during the next 30 days. In the West Coyote Field the Standard should finish four of the five wells now under way on the Emery and Murphy Coyote leases. The R. R. Bush Oil Co. recompleted its No. 2 Bess in the Long Beach Field after redrilling and cleaning out the hole to 4,100 feet. This well, which was returned to production pumping 102 bbls. of 26.3 gravity oil per day, was originally completed in 1922 at 3,362 feet and subsequently recompleted the following year after being redrilled and deepened to 5,362 feet. There are only five incompleted drilling projects under way in the Long Beach Field, but the scarcity of new work is more than offset by 27 reconditioning jobs scattered throughout

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MICHIGAN WELLS NEARING PAY IN NEW EAST FIELD EXTENSION

By George A. Whitney

MOUNT PLEASANT, Mich., Apr. 4.—Three completions were reported from the Michigan fields, two dry, the other being a good producer of oil, while several drilling wells nearing the pay sand are very important as to an extension to the New East Pool. The good oil well was Walter L. McClanahan's No. 4, 990 feet from the north line and 330 feet from the west line of the A. G. Struble farm, NW SE SW, Section 10, Greendale Township, Midland County, and estimated with an initial production of 790 bbls. The test of Wells and Miller on the Thom farm, S half SE, Section 9, Lee Township, also in Midland County, and approximately 3 miles east of production, has been completed dry at a total depth of 3,837 feet. The other dry hole was drilled by James A. McKay in No. 9 McKay farm, SW SW NE, Section 6, Grant Township, Clare County. It was drilled for gas and made no showing in the Marshall sand.

Much interest is manifested in the test of Walter L. McClanahan on the W. S. Root farm, NW NE SW, Section 12, Greendale Township, about 2 miles east and a half mile north of the Struble farm. The Root well is 330 feet from the north and east lines of the farm. Another interesting well nearing pay sand is W. L. McClanahan's No. 1, 330 feet from the south line and 990 feet from the west line of the Corning estate, SE SW SW, Section 2, Greendale Township, Midland County, about 1½ miles northeast of the Struble. In the Root farm test a strong gas showing was encountered in the top of the Dundee and at 27 feet in the Dundee it made a showing of oil and will no doubt make a commercial producer. The well is high on structure and for that reason the average operator contends it should be a good one when completed, while the Corning heirs well is reported to have found top of the Dundee around 30 feet lower. Both tests are being watched by adjoining leaseholders and will add a large area if productive.

According to reports much interest has been aroused by a well drilled last fall on the Solms Brothers farm, Section 26, Lee Township, Midland County, by Walter L. McClanahan, 5 miles southeast of the Struble farm. It came in a salt water well and was abandoned. It is now showing a good grade of oil. The well is reported to have topped the Dundee formation at 3,485 feet, and drilling stopped at 33 feet in the Dundee, at a total depth of 3,518 feet. Because of its location in the extreme northeast corner of Section 26, Lee Township, the Solms test attracted more than ordinary interest. The well at the time of the drilling was regarded as a possible key to important development activities to the south and east of the prolific East Pool. Mr. McClanahan, owner of the well, does not attach much importance to the filling of the abandoned hole with crude oil. While not questioning the quality of the oil he attributes it to seepage in the shallow Traverse formation, indicating nothing to warrant renewal of drilling at the lower level. However, the appearance of the oil has aroused

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IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Hines Pet., No. 1 Ocean Park, Los Angeles Co.	9- 2-15	7,414	suspended
Taylor Oil Co., No. 1 Culver, Los Angeles Co.	12- 2-15	6,238	suspended
Westwood Oil Co., No. 2 Hermosa, Los Angeles Co.	6- 4-14	2,151	suspended
Staple Oil Co., No. 1 Manhattan, Los Angeles Co.	24- 3-15	2,700	suspended
Lawndale Pioneers, Inc., No. 1 Peck, Los Angeles Co.	20- 3-14	6,378	prod. test
Barcus, W. I., No. 1 Watson, Los Angeles Co.	28- 4-13	....	material
Baldwin Oil Co., No. 9 Inglewood, Los Angeles Co.	7- 2-14	1,400	cemented
Baldwin Hills Synd., No. 1 Inglewood, Los Angeles Co.	17- 2-14	4,090	cemented
Brubaker, W. O., No. 1 Van Nuys, Los Angeles Co.	11- 2-15	2,700	suspended
Rucker & Croul, No. 2 Puente, Los Angeles Co.	27- 2-10	2,200	suspended
El Dorado Oil Co., No. 1 Puente, Los Angeles Co.	30- 2- 9	2,261	hd. sd. drilling
Cudahy Oil Co., No. 1 Bell, Los Angeles Co.	30- 2-12	1,370	suspended
Jones, W. L., No. 1 Bell, Los Angeles Co.	31- 2-12	1,593	fishing
Weist Oil Co., No. 1 Montebello, Los Angeles Co.	34- 1-11	4,902	suspended
Blinn & Gray, No. 1 Montebello, Los Angeles Co.	6- 2-11	5,060	recemented
Wardell & Menichini, No. 1 Montebello, Los Angeles Co.	7- 2-11	rig	rigged up
Yellowstone Oil Co., No. 1 Alhambra, Los Angeles Co.	24- 1-13	3,919	suspended
Yellowstone Oil Co., No. 2 Alhambra, Los Angeles Co.	19- 1-12	2,015	suspended
Davidson Oil Co., No. 1 Monterey Park, Los Angeles Co.	32- 1-12	....	location
Rucker, L. W., No. 1 Calabasas, Los Angeles Co.	26- 1-17	1,004	suspended
Caballero estates, No. 1 Calabasas, Los Angeles Co.	23- 1-16	1,480	hd. sd. drilling
Marble, Willard, No. 1 Chatsworth, Los Angeles Co.	6- 2-16	1,395	suspended
Ajax Pet., No. 1 Newport, Orange Co.	21- 6-10	7,259	to set pipe
Beck, Alfred, No. 1 Corona, Riverside Co.	8- 4- 6	1,110	suspended
Spindletop Oil Co., No. 1 Salton Sea, Riverside Co.	25- 7-10	3,590	suspended
Duncan, N. I., No. 1 Sagebrush, Riverside Co.	8- 4- 6	1,157	suspended
Colan Dev. Co., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,392	sidetracking
Mason Oil Co., No. 1 Salton Sea, Imperial Co.	1-17-15	656	sd. sh. drilling
Woods, D. H., No. 1 Salton Sea, Imperial Co.	7-11-16	751	sd. sh. drilling
Borderland Oil Co., No. 2 Encinitas, San Diego Co.	12-13- 4	2,677	fishing
South Bay Oil Co., No. 1 Border, San Diego Co.	31-18- 2	1,243	suspended
Itasca Pet. Co., No. 1 Mesa, San Diego Co.	33-18- 1	1,700	suspended
Oklahoma Oil Corp., No. 1 Palms, San Diego Co.	25-11- 8	1,829	sd. sh. drilling
Shannon, C. H., No. 1 Kearney, San Diego Co.	14-15- 3	1,046	sd. sh. drilling

IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Standard, No. 1 Santa Rosa Island, Santa Barbara Co.	.....	.....	building road
Barnsdall, No. 1 Los Alamos, Santa Barbara Co.	31- 8-33	3,298	sd. sh. drilling
Western Gulf, No. 1 Santa Maria, Santa Barbara Co.	5- 9-33	8,593	br. sh. drilling
Midwest Oil Co., No. 1 Los Alamos, Santa Barbara Co.	2- 7-35	3,514	br. sh. drilling
General Pet., No. 133 Goleta, Santa Barbara Co.	21- 4-23	2,030	suspended
General Pet., No. 134 Goleta, Santa Barbara Co.	21- 4-28	2,053	suspended
General Pet., No. 136 Goleta, Santa Barbara Co.	21- 4-28	2,047	suspended
General Pet., No. 137 Goleta, Santa Barbara Co.	21- 4-28	2,050	suspended
Johnson, G. W., No. 1-A Goleta, Santa Barbara Co.	19- 4-27	5,554	hd. sd. drilling
Sovereign Oil Co., No. 1 Guadalupe, Santa Barbara Co.	20-10-35	5,500	suspended
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	suspended
Associated, No. 1 Rincon Creek, Ventura Co.	19- 4-24	2,080	suspended
Woodrow Pet., No. 1 Miguelito, Ventura Co.	4- 3-24	mtl.	building rig
Bell, H. H., No. 1 South Mountain, Ventura Co.	22- 3-21	2,484	suspended
Pure Oil Co., No. 1 S. F. Canyon, Ventura Co.	15- 4-21	2,591	suspended
Magu Synd., No. 1 Oxnard, Ventura Co.	17- 1-25	5,601	sd. sh. drilling
American Oil Co., No. 1 Conejo, Ventura Co.	33- 2-20	1,590	hd. sd. drilling
Graham & Loftus, No. 1 Goose Lake, Kern Co.	20-27-22	6,619	testing
General Pet., No. 1 Buttonwillow, Kern Co.	6-28-23	2,760	deepening
Wilshire Oil Co., No. 1-A Buttonwillow, Kern Co.	7-29-24	7,000	testing
Milham Expl. Co., No. 12 Buttonwillow, Kern Co.	7-28-22	1,480	sd. sh. drilling
Furman, T. H., No. 1 McKittrick, Kern Co.	22-29-21	3,671	sd. sh. drilling
Welport Oil Co., No. 8 McKittrick, Kern Co.	26-29-21	1,298	cleaning out
Federal Drlg. Co., No. 1 Buena Vista, Kern Co.	20-31-24	5,380	suspended
General Pet., No. 1 Belridge, Kern Co.	30-28-21	3,260	suspended
Wallace, K. C., No. 1 Belridge, Kern Co.	32-29-21	4,222	suspended
Rio Cal Pet., No. 1 Shale, Kern Co.	2-27-18	2,355	suspended
Wicker, Sy., No. 1 Arvin, Kern Co.	12-30-28	3,850	suspended
Fullerton Oil Co., No. 4 Semitropic, Kern Co.	9-28-24	2,580	sd. sh. drilling
Cumberland Oil Co., No. 2 Devils Den, Kern Co.	17-26-18	3,225	suspended
Totem Oil Co., No. 1 Devils Den, Kern Co.	29-25-19	rig	suspended
Signal Oil Co., No. 1 Blackwell Corner, Kern Co.	15-26-19	106	resume work
Regina Oil Corp., No. 1 Mojave, Kern Co.	26-10-14	2,772	sd. sh. drilling
Meridian Oil Co., No. 1 Mojave, Kern Co.	11- 9-15	4,000	suspended
Harding, J. B., No. 1 Mojave, Kern Co.	5-10-10	1,030	redrilling
Barnsdall Oil Co., No. 1 Tejon, Kern Co.	15-11-20	5,073	sd. sh. drilling
Ritchie, J. J., No. 1 Tejon, Kern Co.	33-11-19	6,025	suspended
Descanso Oil Co., No. 1 Tejon, Kern Co.	31-11-19	2,749	hd. sd. drilling
Associated, No. 1 Jacalitos, Fresno Co.	22-21-15	6,197	suspended
Kingsburg Expl. Co., No. 1 Kingsburg, Fresno Co.	30-16-23	2,430	cleaning out
Kent & McDonald, No. 1 Carrizo, San Luis Obispo Co.	3-32-22	2,630	redrilling
Trav-El Oil Co., No. 1 Carrizo, San Luis Obispo Co.	7-32-22	2,450	suspended
Indian Dome Oil Co., No. 1 Edna, San Luis Obispo Co.	26-31-12	2,380	suspended
Martin, J. D., No. 1 Edna, San Luis Obispo Co.	5-31-13	3,070	suspended
Paso Robles Oil Co., No. 1 Edna, San Luis Obispo Co.	27-27-11	4,191	suspended
Emerich Oil Co., No. 1 Atascadero, San Luis Obispo Co.	13-28-12	1,945	test W.S.O.
Schilling, C., No. 1 Atascadero, San Luis Obispo Co.	1-29-12	1,650	suspended
Pacific Inland, well No. 1, Monterey Co.	19-23-15	2,280	suspended
Brown, W. F., No. 1 Parkfield, Monterey Co.	15-23-14	1,051	cleaning out
Guess, E. B., No. 1 Corcoran, Kings Co.	7-21-21	6,197	suspended
Niel, W. B., No. 1 Dudley Ridge, Kings Co.	32-22-20	rig	suspended
Kettleman Nat. Gas Co., No. 1 Dudley Ridge, Kings Co.	18-22-19	1,100	suspended
Irma Investment Co., No. 2 Dudley Ridge, Kings Co.	7-23-20	1,224	testing
Eagle Oil Co., No. 1 Dudley Ridge, Kings Co.	15-23-20	1,125	suspended
Valley Expl. Co., No. 1 Dudley Ridge, Kings Co.	12-23-19	1,302	suspended
Knudsen & Schmidt, No. 1 Reef Ridge, Kings Co.	36-23-17	5,894	suspended
Seymour, L. W., No. 1 Avenal, Kings Co.	10-23-16	1,148	testing
Magee & Stone, No. 1 Alpaugh, Kings Co.	34-24-22	2,660	sd. sh. drilling
Tulaco Oil Co., No. 1 Corcoran, Tulare Co.	20-22-22	rig	suspended
Ducor Pet. Co., No. 1 Ducor, Tulare Co.	14-24-27	2,200	redrilling
Inland Valley Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,092	suspended
Gravity Expl. Co., No. 1 Alpaugh, Tulare Co.	11-24-23	920	sd. sh. drilling
Ellis & Sanford, No. 1 Tulare Lake, Tulare Co.	20-24-23	1,920	suspended
Twin State Oil Co., No. 1 Point Arena, Mendocino Co.	14-12-17	7,694	suspended
Napa Oil Co., No. 1 Griffith, Napa Co.	7- 8- 3	2,848	test W.S.O.
Orinda Pet., well No. 1, Contra Costa Co.	32- 1- 3	2,120	suspended
Colusa Oil Co., No. 1 Bush, Colusa Co.	31-15- 4	1,040	suspended
Oakdale Oil Co., No. 1 Oakdale, Stanislaus Co.	3- 2-10	4,750	suspended
Hilderbrandt, R., No. 1 Crows Landing, Stanislaus Co.	36- 6- 7	1,130	suspended
Orland Oil Synd., No. 1 Orland, Tehama Co.	31-23- 3	3,040	suspended
Pacific Northern Oil Co., No. 1 Guinda, Yolo Co.	23-12- 3	2,005	cleaning out
Easton & Monell, No. 1 Colma, San Mateo Co.	25- 3- 6	3,101	sd. sh. drilling

New Field Is Opened in Starr County

Important Deals in Pettus District. Two Tests Starting in Brook County. Plan Wildcat in Southern Colorado County

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Apr. 4.—Heard and Heard of Refugio opened a new field in Starr County this week with the completion of No. 1 Goodrich in sand at 1,368-80 feet flowing about 200 bbls. a day. The well was first carried as R. E. Johnson's No. 1 Goodrich and also as Sioux Oil Co.'s No. 1 Goodrich. It is now owned by Heard and Heard and is about 1½ miles northeast of Rio Grande City and 6 miles southeast of the Los Olmos shallow field. No. 1 Goodrich is 1,214 feet from the north line and 1,065 feet from the west line of the Goodrich 1,063-acre tract. On maps not showing the subdivisions of the porcions the well is near the west line of Porcion 81 and approximately 2¼ miles north of the river. The shallow Los Olmos Field is 7 miles north of the river and 4 miles west of No. 1 Goodrich in Survey 75, 76 and 77.

The oil industry has been skeptical of the reported production of the wells in the shallow Los Olmos Field with several sands ranging from around 200 feet down to 500 feet. Tarver and Nance deepened their No. 2 Kelsey-Bass last week to 472 feet and increased it on the pump from 38 bbls. to 67 bbls. Hooks & Weaver's No. 4 Kelsey-Bass is pumping 72 bbls. a day. There is no water. These are the two best wells in the field. Many are pumping around 20 bbls. and the field now has a total production of 450 bbls. daily and making an effort to get a pipe line to the railroad track, a distance of about 7 or 8 miles. Two deals that contemplated the building of such a line have been reported in the past as closed but the lines have not been built.

This new pool attracts attention to the wildcat efforts in that part of the county. A little northeast of a straight line between the pool and the Heard and Heard new well, Simms Oil Co. drilled a few years ago and got gas, and Stryalls Oil Corp. at this time has a test a half mile northwest of it down 1,540 feet and standing. Tests are being drilled southeast of the shallow pool on the theory of its extending in the direction of Rio Grande City and Tarver and Nance are down 735 feet on No. 1 Guerra, a half mile northwest of Rio Grande City and with some pretty good showings of oil and gas. All sorts of other deals are in the air at this time and pending, and with the good shallow production of the Los Olmos Pool to urge on the buyers some pretty stiff prices are being asked for acreage where it is in line with the best theories as to the trends.

These two pools are Starr County's only production with the exception of one well of The Texas Company 12 miles west near the Rio Grande, a small well at around 3,500 feet, completed some years ago.

Nueces County—Saxet Field

Houston Oil Co. is completing its No. 1 McGregor this week and it looks sure for at least 200 bbls. The well is in at 4,265 feet, but the company is pulling the tubing to experiment with bottom hole chokes to get the right combination for the maximum of production. The well is a mile north of production in the field, but the only wells producing from this depth are three wells on the Dunn lease of the Saxet Oil Co., 3 miles east, but there is no positive identification of the sands and it may not be the same sand as there are many sands in the field. Pressure on the well is 725 pounds, which is much less than in other wells and thought favorable for better production as the other tests have too high gas pressure.

Other operations in that field have not progressed the past week to any great extent, with the exception of the wildcats up and down the coast.

Magnolia Petroleum Co. on the arrival of new drill stem attempted a further sand test of No. 1 Seeligson in southern Jim Wells County in sand at 4,927-33 feet, but failed to get a very satisfactory and conclusive test and has started to core deeper. The core from the sand had an odor of oil.

Pettus District

Two important deals were closed in the Pettus district the past week. Gulf Coast Oil Co. closed a deal for the Nichols Oil Corp. block, including the two producing wells at Normanna and known as the Normanna Pool. This is 6 miles south of the Pettus Pool. One of the two producers which constitute the field is a gas well at 2,000 feet and the other a gas and oil well. No. 1 Hicks was abandoned at 1,408 feet. No. 2 Hicks made a gas well at 1,920 feet for about 1,500,000 feet of gas and the No. 3 a 20,000,000-foot gas well making 30 to 40 bbls. of oil at 3,641 feet. No. 4 Hicks was abandoned dry at 4,512 feet.

Gulf Coast Oil Co. is to drill five more tests in the field and further develop it.

The other deal is by the Texas Gulf Producing Co. which took over the 7,700 acre block of Hurlburt and others a few miles southeast of Beeville on which No. 1 Wood was drilled to 5,077 feet. It was finished and abandoned a year ago but lately when opened flowed a little oil for a short time. Texas Gulf Producing Co. will attempt to make a well of it and contracts to drill three other tests. The Texas Gulf Producing Co. is O. R. Seagraves' new company.

Balcones Fault Zone

Cole and Moseley's No. 1 Pierce, in chalk at 2,114 feet, made a head of oil that attracted considerable attention and indicates some possibilities of a new field. It is half way between the Bruner and Luling Fields in Caldwell County, being about 2½ miles northwest of the town of Luling, and if it opens a pool it would be one running parallel to that of the Luling and Bruner or Salt Flats Field. It topped the chalk at between 2,050 and 2,100 feet. It is preparing to test.

Several tests drilled in years past have indicated a fault line in that district. M. O. Rayor recently completed two tests a half mile south of No. 1 Pierce which made a little oil from the chalk. They were carried to the Edwards but got sulphur water in the Edwards and plugged back and produced for a time around 40 bbls. daily.

There is some thought that Cole & Moseley's No. 1 Pierce, which was taken over and drilled to present depth by Bob Rose, is in a crevice, and if so the oil could have come from the Edwards lime below. Crevice wells in the Darst Creek Field were large producers usually. Until a further test is made the possibilities of No. 1 Pierce will be unknown.

One important deal was closed in the Luling area recently. Sal-Mar Oil Corp. took over the Barnhill and others block east of Seguin several miles on which No. 1 Hoffman had been carried to 800 feet. This test is being abandoned and the rig moved to the F. A. Pfullman tract for the first of three tests. Location is 150 feet from the west line and 1,050 feet from the north line of the farm in the Lewis Bollinger Survey.

Late in the week C. J. Webster Oil & Gas Co.'s No. 1 McCrory in Caldwell County, northeast of the Luling Field, at 1,980 feet was thought likely to have only a thin slice of the chalk or none at all in which event it would run high and be very interesting.

Southwest of the Darst Creek Field Humble Oil & Refining Co.'s No. 4-C Sue Denman topped Edwards lime at 2,542 feet, looks like a well, and if finally completed will tend to close up the gap between the southwest end of Darst Creek Field and the new production known as the Camp Field a mile or more southwest.

In the northern end of the Balcones they are still waiting for the Taylor Refining Co. and G. B. Peterman's No. 1 Galler in Williamson County to drill in at 1,493 feet with a showing in the Edwards. It was thought likely it would drill in early the coming week.

Laredo District

Price of crude oil in the Laredo district the past week was advanced by Magnolia Petroleum Co. to 90 cents effective April 1 which put heart in the oil industry but there was a quickening of operations and a world of new oil men coming into the country before that. Several new deals are being undertaken at this time. Trinity Drillers are to drill in Survey 122 near the north county line and 6 miles northeast of the S.R.C. Pool.

Trend of pools and production is northeast and southwest in that part of the Laredo district and this wildcat is playing the trend of the S.R.C. Pool.

Another important wildcat is French Oil Corp.'s No. 1 Lopez, in Survey 731, in Duval County, near the west line of the county, 1,000 feet north, 25 degrees west of the Sun Oil Co.'s No. 1 Lopez

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WILDCAT OPERATIONS IN SOUTHWEST TEXAS

Week Ending April 2

ATASCOSA COUNTY

Company, farm and location— Remarks:

American Central Oil Co.'s No. 2 Mary McConnell, 150 ft. W of E line, 300 ft. S of No. 1, Blk. 138, W. C. M. Baker Sur., 3 miles W and 6 miles S from Somerset..T.D. 1,660 ft.; standing.

Glen Mathis' No. 2 Mrs. C. Martin, 100 ft. SE of No. 1...T.D. 2,980 ft.; preparing to resume.

BLANCO COUNTY

Hardy-Sitton's No. 1 McMillan .....T.D. 602 ft.; abnd.

Liles Adams et al's No. 1 Luders, 150 ft. to S line, 1,420 ft. to E line of James Stanford's No. 155 .....T.D. 1,100 ft.; abnd.

BASTROP COUNTY

I. L. Champion's No. 1 Owens, 500 ft. to SE line, 600 ft. to SW line of 628-ac. tract, Isaac Cosner Sur. ....Location.

E. R. Marts and W. J. Beavens' No. 1 R. L. Carter, 450 ft. from NE line, 150 ft. from NW line of 100-ac. tract in George J. Glasscock Sur. .....T.D. 1,200 ft.; drlg.

Sun Oil Co.-Humble Oil & Ref. Co.'s No. 1 Powers, 400 ft. of N and E lines of Blk. 197, Bastrop town tracts..T.D. 4,229 ft.; drlg.

BEE COUNTY

Alexander et al's No. 1 McFall, 3 miles S Skidmore .....T.D. 2,100 ft.; standing.

Humble O. & R. Co.'s No. 1 Laura Thompson, 6,360 ft. from N line, 16,100 ft. from W line of tract in Garrett Roache Sur., S part of county .....T.D. 5,310 ft.; getting in fuel.

Texas Gulf Producing Co.'s No. 1 Webb Hearn, 1,000 ft. N of Hurlburt's No. 1 Wood in P. T. Irrigation Co. Sur. .....Location.

BELL COUNTY

J. W. Riley's No. 1 W. S. Chaffin, in M. Griffin Sur. ....T.D. 450 ft.; S.D.

Jas. Scroggins' No. 2 Warrick, Ingram Sur. .....T.D. 1,432 ft.; fishing.

BEXAR COUNTY

Amsden-Ingersoll-Miller's No. 1 Strumberg, 450 ft. to W line, 1,020 ft. to N line of tract, 12 miles SW of San Antonio .....T.D. 810 ft.; S.D.

Callahan Final Oil Co.'s No. 1 B. H. Buck, 900 ft. to E line, 3,300 ft. to S line of farm, in J. M. McGamley Sur. .....T.D. 650 ft.; S.D.

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SOUTHWEST TEXAS PROVEN AREAS

Week Ending April 2

COSDEN POOL—BEE COUNTY

Company, farm and location— Remarks:

Henderson Coquat's No. 1 Leroy Roberts, 300 ft. from W line of lease, 300 ft. N of NE cor. of Gremmel tract .....Location.

NORMANN POOL—BEE COUNTY

Gulf Coast Oil Co.'s No. 1 Hicks, 300 ft. S of Nichols Oil Co.'s No. 1 Hicks .....Moving in rig.

PETTUS POOL—BEE COUNTY

Henderson Coquat's No. 2 Mauldin, 647 ft. to S line, 150 ft. to W line .....T.D. 3,886 ft.; teating sand.

Henderson Coquat and Barnsdall's No. 1 Leroy Roberts, 300 ft. N and E of NE cor. of Gremmel tract .....Rigging up.

United Production Co.'s No. 40 Ray, 2,990 ft. SE along the SW line of T. Thomas Hanson Survey from SW cor. thence 2,346 ft. NE at right angles .....Rigged up.

United Production Co.'s No. 41 Ray in George A. Kerr Sur., 660 ft. NE of No. 33 Ray and 660 ft. SW of No. 31 Ray .....T.D. 210 ft.; set surface csg.

COOKSEY POOL—BEXAR COUNTY

Chiquita Oil Co.'s No. 3 Cooksey, 480 ft. from E line, 330 ft. from S line of tract in J. W. Rialls Sur. .....Location.

Chiquita Oil Co.'s No. 1 Dan Kosub .....T.D. 1,579 ft.; set csg.

ECKERT POOL—BEXAR COUNTY

Alamo Nat. Gas Co.'s No. 4 Gembler in Manachaca Sur. No. 51 .....Dropped.

Alamo Natural Gas Co.'s No. 3 J. H. Gembler, 180 ft. from N and E lines of tract in A. Manachaca Sur. No. 51 .....T.D. 1,100 ft.; drlg.

F. H. Eckert & Son's No. 9 Sandemer, 150 ft. to N and W lines .....Location.

F. H. Eckert & Son's No. 10 Sandemer, 400 ft. E of No. 9..T.D. 710 ft.; comp. 8 bbls.

F. H. Eckert & Son's No. 1 Louis Brehm, W offset to No. 3 John J. Brehm .....Location.

Gatlin Oil Co.'s No. 11 I. A. Beck, 700 ft. from SE line, 156 ft. from SW line of tract in J. Montes Sur..Location.

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Revise Production Plans in Oklahoma

New Allowables and New Drilling Regulations Are Among the Changes in Corporation Commission's Orders

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

The recent increase in crude oil prices in Oklahoma has created a better feeling and new interest is being shown in certain districts in the State. The Conservation Pool in Pontotoc County and the Fish Pool in eastern Seminole County look promising from a development standpoint. Oil production in Oklahoma for the week ending April 2 averaged approximately 407,500 bbls. a day, which is a decline of nearly 28,000 bbls. a day from the previous week. Most of the decline was in the Oklahoma City Field, which averaged 83,025 bbls. daily.

With the expiration of the 60-day shutdown agreement in the pool south of Sacred Heart, in Pottawatomie County, an active drilling campaign is expected to develop. The discovery well is approximately 1½ miles south of the nearest production. It is the Carter Oil Co.'s No. 1 Monett, SW cor. Section 35-7-4, which, after having been drilled deeper into the Simpson sand, flowed 1,410 bbls. of oil in 24 hours. Five new operations are reported in the vicinity of the well. Amerada Petroleum Corp.'s No. 1 Mitchell, NE cor. Section 3-6-4, is a location. Carter Oil Co. and others' No. 1 Tucker, SE [illegible] ction 34-7-4, which was started [illegible] the discovery was first completed and was shut down, is to be drilled. Magnolia Petroleum Co. has made a location for No. 1 Martin, SE cor. NE SW Section 34-7-4. Indian Territory Illuminating Oil Co. has made a location for No. 1 Lucas, NW cor. Section 2-6-4, a south offset to the discovery well. T. G. Kelley and others' No. 1 in the SW cor. NE Section 35-7-4, is a location a half mile northeast of the discovery well.

Oklahoma's Increased Allowable

The allowable production for the State of Oklahoma for the second quarter beginning April 1, was increased to approximately 452,160 bbls. daily during the week by the Oklahoma Corporation Commission.

The estimated allowables and potentials for the different districts for the opening of the period were given as follows:

District—	Allowable	Potential
Oklahoma City	103,000	3,371,425
Class "B"	137,107	302,073
Class "C"	20,875	136,972
Class "A"	181,181	192,534
Total	452,163	4,003,305

The pipe line nominations in the Oklahoma City Field were reduced when the Shell Petroleum Corp. cut its nominations from 12,000 bbls. to 6,000 bbls. daily and the Sinclair-Texas Pipe Line Co. declined to make any nominations. The nominations were taken from the purchasers in the Oklahoma City district only and Ray M. Collins state umpire gave figures on potentials and total pipe line shipments from the other districts in the State.

The deferred underage in the Oklahoma City Field totals approximately 143,000 bbls. and the current underage totals approximately 35,000 bbls. It is now considered so nearly even that the new order did not allow any allocation for underproduced oil.

A total of 3,500 bbls. a day was allotted to wells in the lime zone. The 95 wells making water will be granted 100 bbls. each daily, 704 eligible wells are given 25 bbls. each per day for a total of 17,600 bbls. while the remaining 69,100 bbls. will be allocated on 2 per cent of the adjusted potential.

On the state-wide order, the commission accepted the recommendations of the umpire and removed all restrictions from stripper wells, and others making 20 bbls. per day. On wells making more than 20 bbls. a day the quantity above 20 bbls. will be prorated 50 per cent.

Allowable of the Fish Pool, in Seminole County in Township 7-8, was increased to 3,500 bbls. a day from 1,500 bbls. The Wewoka Townsite Pool will be reduced from 5,600 bbls. a day to 4,000 bbls. a day. Potentials will be taken in the Fish Pool on June 1 and again in September.

No action was taken on the protest of W. H. Atkinson, on the Fish Pool, proration changes, nor on the protests made to proration rules changes in the Oklahoma City Field by four of the companies.

Opposition Cropped Out

At the statewide proration meeting at Oklahoma City most of the time was consumed in hearing the opposition to the proposed revision of proration regulations in the Oklahoma City Field. Opposition to the changes were brought by Anderson-Prichard Oil Corp., Cromwell-Franklin Oil Co., Wirt Franklin Petroleum Corp. and Tom Slick Oil Co. Protests by the operators in the Fish Pool and the Oklahoma City Field did not delay the new proration order, which became effective Friday morning, April 1.

Proposed changes would reclassify the wells in the Oklahoma City Field and reallocate allowable production, with little changes in the amounts of crude oil produced. Opponents of the change saw the four-zone classification cast aside, which some claimed would be detrimental to owners of old and small producers.

Opposition was directed against the proposal of Umpire Ray M. Collins to wipe out the underproduction on 17 wells which are said to be unable to make their present allowables.

A protest is pending before the Corporation Commission, having been presented by the Phillips Petroleum Co. last December. No action has been taken by the commission. The company has been following the other operators under the existing rules.

The proposal by operators in the Fish Pool, in Seminole County, was presented by W. H. Atkinson, part owner of production in the area. The protest is based on action of the umpire in changing the allowables of the field without authority from the commission.

It was pointed out that at the hearing last June the field was allowed a daily production of 1,500 bbls., the Stanolind Crude Oil Purchasing Co. to take the oil. Prior to that time the field was classified as wildcat territory and the seven producing wells were permitted to flow 50 bbls. each per day.

Shortly after the 1,500-bbl.-a-day allowable was made, the pipe line company declined to take the entire 1,500 bbls., but did take 50 bbls. from each well until the military shutdown. In October the allowable again was placed at 1,500 bbls. daily for the field. Since that time nine wells have been completed in the field and four others are now drilling. W. H. Atkinson wants an adjustment on the production for the period during the time the pipe line company reduced its shipments from the field, since the allowable was never reduced by the commission.

Nominations Compared

The following table shows the nominations by companies for the last half of March and the first half of April. The field allowable was increased during the last half of March to 115,000 bbls. but it was placed at 103,000 bbls. for the first half of April.

Company—	Old nominations	New nominations
Champlin	640	930
Continental	2,000	2,000
Empire	18,000	18,000
Globe	7,100	8,000
Magnolia	7,500	7,500
Oklahoma	18,000	25,000
Operators	2,600	1,350
Prairie	600	900
Shell	12,000	12,000
Sinclair	9,000	None
Stanolind	20,000	20,000
Tidal	140	300
Wilcox	1,500	1,200
Canadian	250	500
Capitol P. & R.	60	71
Century	1,500	2,000
Peacock	200	209
Petroleum	3,500	2,000
White Oak	200	370
Major Products	250	350
Total	105,040	102,680

A member of the umpire's staff testified that there would be 704 wells with an adjusted potential of 3,371,425 bbls. in the Oklahoma City Field daily available for production during the month of April. During April it was estimated that 16 wells with a daily average initial production of 3,433 bbls. would be completed.

Wells in the lime zone averaged 3,667 bbls. daily during the first 24 days of March. There are now 93 wells, outside of the lime zone, making 3 per cent or more water daily and are entitled to special exemption.

It was also stated that the lease stocks on March 1 totaled 773,645 bbls. The March production was estimated at 3,176,756 bbls. and the pipe line shipments were estimated at 3,180,042 bbls. It is estimated that at the end of March there would be in storage 770,350 bbls. of oil. The umpire and the commission have been working on an estimated 700,000 bbls. of stocks as tank bottoms for working facilities.

It was estimated by a member of the umpire office staff that the deferred underproduction would total 299,819 bbls. as of April 1, and the current underproduction would total 165,271 bbls. If the underproduction from the above 17 wells is eliminated it will greatly reduce the amount in the Oklahoma City Field and will bring the field as near even as it is believed possible.

Underproduction

It was proposed by Umpire Collins that 163,104 bbls. of underproduced oil from 17 wells be wiped out of the records in the Oklahoma City Field. These wells are believed unable to make their present allowable and will probably not be able to make up all of their underage by May 1 at which they would be taken out of the records.

Ten of the producers are classed as water wells. The following table shows the company, well and amount of under-

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WILDCAT OPERATIONS IN OKLAHOMA

NORTHERN OKLAHOMA
ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Brothers' No. 1 Forbes, SE cor. NW NW Sec. 12-27-11w	S.D. 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	S.D. 5,502 ft.

BECKHAM COUNTY

Pattel Royalty's No. 1 Goose Tree, SW SE SW SE Sec. 32-10-25w	Rig.
Price-McFann's No. 1 Webster, C SW SW Sec. 34-5-26w	T.D. 2,344 ft.; plugged back to 1,890-1,900 ft.; 1,500,000 ft. gas.
Mid-Continent's No. 1 Schaff, C NE SW Sec. 22-11-22w	Waiting on cmt. to set 430 ft.
Mid-Texas Co.'s No. 1 Sidell, NE cor. SW SW Sec. 17-22-22w	S.D. 2,550 ft.
White et al's No. 1 Green, SW cor. Sec. 24-10-24w	S.D. 3,575 ft.

BLAINE COUNTY

Washoma Oil Co. et al's No. 1 Phillips, C NW SW Sec. 13-19-10w	S.D. 5,115 ft.

CADDO COUNTY

Abernathy & Brown's No. 2 Houston, Sec. 24-6-13w	S.D. 1,115 ft.

CHEROKEE COUNTY

La Piere et al's No. 1 Woods, C SE SE Sec. 27-17-21	S.D. 1,504 ft.

COAL COUNTY

Radial Oil Co.'s No. 1 McGraw, NE NW Sec. 2-1s-8	S.D. 1,450 ft.
Whitney et al's No. 1 Miller, SE NE Sec. 10-2-8	Show wtr. 1,155-60 ft.; drlg. 1,475 ft.

COMANCHE COUNTY

G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	S.D. 1,450 ft.

CREEK COUNTY

R. F. Moore et al's No. 1 Gilliam, NE cor. SW NW, Sec. 17-17-8	Drlg. 2,350 ft.

CUSTER COUNTY

Miley Pet. Co.'s No. 1 Caldwell, NE Sec. 12-14-14w	Location.

GRADY COUNTY

Schoonmaker et al's No. 1 Station, NW cor. 35-4-6w	Rig.

GARFIELD COUNTY

E. L. Love et al's No. 1 White, SE cor. NW Sec. 9-24-6w	S.D. 5,850 ft.

GARVIN COUNTY

Malarnee et al's No. 1 Phillips, NE SW SE Sec. 24-2-2w	S.D. 4,830 ft.

GREER COUNTY

Dovell et al's No. 1 Capell, NW cor. Sec. 1-7-22w	5,000,000 ft. gas 1,455-65 ft.; T.D. 1,760 ft.
French's No. 1 Murphy, SW NW Sec. 23-7-21w	S.D. 1,645 ft.

HASKELL COUNTY

Ault et al's No. 1 Hall, NW SW SW Sec. 14-9-19	S.D. 2,000 ft.
Ault et al's No. 1 Hall, SE NW Sec. 25-19-9	S.D. 200 ft.

KAY COUNTY

Bluebaugh et al's No. 1 Indian, C NW NE Sec. 30-26-1	S.D. 1,480 ft.
Harris & Haun's No. 1 Watson, SW NW Sec. 28-28-1w	Drlg. 2,944 ft.
Lewis et al's No. 1 Harris, SE NW Sec. 14-25-1	Location.
Mummert Drlg. Co. et al's No. 1 Cormick, C NW SE Sec. 9-27-2	S.D. 3,693 ft.
Blackwell Oil Co.'s No. 1 Harshman, Sec. 2-26-1w	Rig on ground.

KIOWA COUNTY

Christian's No. 1 Jones, NE SE Sec. 8-7-18w	Drlg. 880 ft.

LATIMER COUNTY

P. English's No. 1 Unknown, NW SE Sec. 16-6-19	S.D. 1,542 ft.

LINCOLN COUNTY

Hilton Phillips' No. 1 Phillips, SW NW, Sec. 2-14-3	Drlg. 4,260 ft.
Mote et al's No. 1 School Land, NW cor. Sec. 36-17-5	S.D. 1,430 ft.

OKLAHOMA COUNTY

Citizens Oil Co.'s No. 1 Sage Barber, NE cor. Sec. 21-11-3w	S.D. 1,200 ft.
L. C. Hivick's No. 1 Sunset Addition, NW SW NW Sec. 17-11-3w	S.D. 5,515 ft.

PAWNEE COUNTY

Rockstool's No. 1 Wylie, NW NE SW Sec. 6-20-5	S.D. 1,950 ft.

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Kansas Prepares for Summer Demand

Allowable Production Increased to 130,000 Bbls. but Present Demand Is Below 100,000 Bbls. Developing Central West

By W. A. Spinney
Staff Correspondent, Kansas Fields

Kansas daily allowable production was increased during the week ending April 2 by the Public Service Commission from 110,000 bbls. per day to 130,000 bbls. per day. Purchasing companies in the State have not yet increased their nominations and it is believed the increase was made in order to permit the companies that may need more crude in the future to secure it without any difficulty.

The State's production shows a 2,000-bbl. decline for the week ending April 2, when the daily average was approximately 96,600 bbls.

Henry Rosenthal and others' No. 1 Pinson, CNL SW SW Section 15-25-2, in the Goodrich Pool, in Sedgwick County, found a showing of oil in the Kansas City lime at 2,605-13 feet. Oil rose 1,300 feet in the hole and the well will be put on the pump for a production test. The well was drilled on acreage recently farmed out by the Continental Oil Co.

The Kansas Public Service Commission announced during the week that a new five-day production test was ordered in the Voshell Pool, starting April 4. If the production does not exceed the present pipe line capacity, the field's allowable of 66⅔ per cent will be continued. The allowable will be reduced 10 per cent if the present production exceeds the pipe line capacity. The state umpire announced the three pools in McPherson County, the Ritz-Canton Field, the old McPherson Pool and the Voshell Pool, had a daily average of 19,126 bbls. for the week ending April 1.

Derby's New Line

Plans for the construction of a new pipe line to serve the new oil wells in the southwestern part of Ellsworth County, in the area now called the Holyrood district, was announced during the week by the Derby Oil Co. Construction is expected to start in the near future. The pipe line will be approximately 10 miles long connecting wells in the Stoltenberg and Stratman Pools with a loading rack at Lorraine on the Frisco Railroad. From the loading rack it will be shipped to Valley Center, where it will be pumped back into the Derby Oil Co.'s pipe line to complete shipment to the company's refinery at Wichita. The line will be 2 and 3-inch pipe. Derby Oil Co. owns producing wells in the Stratman and Stoltenberg Pools. Stanolind Crude Oil Purchasing Co. completed the first pipe line into the area and has been the only purchaser of crude in the district.

Good Well in Voshell Pool

Slick, Pryor and Lockhart's No. 1 Stucky, SE cor. SW SW, Section 27-20-3w, a north extension to the Voshell Pool, in McPherson County, on a recent swabbing test made between 35 and 40 bbls. of oil an hour. It is estimated to be an 800-bbl. well. The largest of the other wells in the pool is reported to be making at this time 464 bbls. daily.

In the Johnson Pool, in McPherson County, Shell Petroleum Corp.'s No. 1 Helstrom, SW cor. NE, Section 35-19-3w, was drilling in a chat sand, with the gas increasing, at 2,988-91 feet. It is the second well in the area which was opened by the same company.

W. C. McBride, Inc., and others' No. 1 Freissen, NW cor. SW, Section 20-22-3w, Harvey County, an offset to the F. Hollow discovery well, was spudding.

Continental Oil Co. and Gypsy Oil Co.'s No. 1 Corr, SE cor. NW, Section 12-26-1w, Sedgwick County, was plugged back from a total depth of 3,339 feet to 3,337 feet in an attempt to shut off the water. The well swabbed around 80 bbls. of oil in six hours, and some water. The oil was found in the Viola lime at 3,335-37 feet. The well extended production in the Wright Pool, near Valley Center, in Sedgwick County, a quarter of a mile to the west. It would ordinarily start a drilling campaign but the field is approximately four years old and the water level is necessarily high.

Total Production Figures

The Voshell Pool leads McPherson County pools in total recovery up to March 1, with an accumulated recovery of 10,183,000 bbls. of oil. McPherson County shows a total recovery of approximately 16,525,000 bbls. of oil to March 1.

The oldest field in the county is the Anderson or old McPherson Field, which has produced to January 1, 187,500 bbls. of oil. There are eight wells in that pool, producing from the chat, by pumping. Second in size in the county in total recovery is the Ritz-Canton Field, with a total of approximately 6,152,600 bbls. to March 1. Production in this field is found in the chat and Viola lime.

The Voshell Pool is still being prorated but is producing approximately 66⅔ per cent of its potential. During the month of February according to Umpire L. R. Pickrell, the field produced 229,471 bbls. of oil which is 9,446 bbls. less than the allowable of 238,917 bbls.

According to the umpire's figures the well with the largest potential flow is Spencer Oil Co.'s No. 1 Koehn, which has a potential of 464 bbls.

A potential summary of the Voshell Pool according to the umpire's report of March 1 was as follows:

Company and lease—	No. of wells	Pot. prod. per day
Barnsdall, Krehbiel	6	916
Derby, Stucky	8	1,462
Empire, Voshell	4	483
Gypsy, Kinney	3	268
Gypsy, Krehbiel	4	72
Gypsy, K. Stucky	1	52
Gypsy, C. L. Stucky	1	94
Gypsy, E. Stucky	2	646
I. T. I. O., Voshell	2	124
Marland, Morehouse	2	208
McBride, Krehbiel	2	227
McBride, Voshell	4	215
Mid-Kansas, Voshell	8	1,124
Phillips, Morehouse	2	128
Prairie, Krehbiel	8	317
Shell, J. Koehn	3	192
Prairie, Stucky	2	52
Shell, P. A. Koehn	1	308
Shell, Neufeldt	1	106
Shell, Stucky	6	395
Sinclair, McCurdy	5	1,372
Sinclair, Morehouse	11	1,975
Sinclair, Voshell	2	34
Slick et al, Grattan	2	66
Spencer, Koehn	1	464
Stanolind, D. Zerger	1	25
Stanolind, P. Zerger	2	557
Texas, Stucky	2	157
United-Wolf, Stucky	1	35
Total	97	12,074

Some geologists predict that Reno County, in the central western part of the State, may become active because of favorable structural conditions there and the possible presence of producing formations not found to the northwest along the Barton-Ellsworth Arch. The formations expected are: Lansing at approximately 2,700 feet, chat at 3,400 feet, Hunton lime at 3,750 feet, Viola lime at 3,850 feet, Simpson sand at 3,930 feet, and the Siliceous lime at 4,000 feet.

Survey of Holyrood Area

A survey of the wells and drilling operations in the Holyrood district in Ellsworth County indicates that there are seven producing wells in the field and two other wells being put on the pump, and 11 other operations drilling or preparing to drill.

Rigs are up for Gypsy Oil Co.'s No. 1 Kozisek, C SE SE SE Section 16-16-10w; Gypsy Oil Co. and Palmer's No. 2 Stoltenberg, C NW NE SW Section 22-16-10w; Beardmore and others' No. 1 Stoltenberg, C SE NE SE Section 22-16-10w; Aylward and others' No. 3 Stratman, C SE SW SE Section 1-17-10w, and Slick, Pryor & Lockhart and others' No. 1 C. Heiken, C NE NE NE Section 26-17-10w.

M. R. Buck's No. 1 Tirik, C SE SE Section 10-16-10w, is shut down at 2,260 feet. Williams & Moore's No. 1 Stratman, C SW SE Section 23-16-10w, is shut down at 3,391 feet. Vickers Petroleum Co. and others' No. 1 Stoltenberg, C NW NE NW Section 27-16-10w, was drilling at 1,950 feet. Aylward and others' No. 2 Stratman, C NE NW Section 1-17-10w, is being put on the pump at a total depth of 3,287 feet. Aylward's No. 4 Stratman, C NW NE SE Section 1-17-10w, was drilling at 400 feet. Prairie Oil & Gas Co.'s No. 1 Stratman, C SW NE SW Section 1-17-10w, was drilling at 900 feet. Robertson and others' No. 2 Stratman, C SW SE NE Section 1-17-10w, was drilling at 1,300 feet. Derby Oil Co.'s No. 1 Stratman, C NE NW NE Section 12-17-10w, was running the tubing preparatory to starting pumping, at a total depth of 3,281 feet.

Notwithstanding the recent reduction in the daily allowable in the Holyrood district from 15 per cent to 10 per cent of the potential due to the increased output, operators are expected to continue the drilling of wells.

Recent Completions

Roth & Faurot's No. 1 Schul, Lot 4, Block 28, Reynolds Addition, in SW cor. NE, Section 22-32-4, Winfield, Cowley County, made 300 bbls. of oil in 24 hours from the Silicious lime at 3,256-71 feet, after being drilled deeper from 2,359 feet.

Aylward and others' No. 2 Stratman, NE cor. NW SE, Section 1-17-10w, in Ellsworth County, made 1,918 bbls. when completed in the Silicious lime at 3,268-87 feet. Derby Oil Co.'s No. 1 Stratman, NE cor. NW NE, Section 12-17-10w, was completed for 974 bbls. in 24 hours from the Silicious lime at 3,253-83 feet. Both of these wells extend the Stratman area.

On the east side of the Decker gas field and north of production in the Ritz-Canton Pool, Helmerick & Payne and Shell Petroleum Corp.'s No. 1 Russell, NE cor. SW SE, Section 12-19-2w, was dry in the Viola lime and has been abandoned at a total depth of 3,443 feet. The test was one of the few dry holes completed in the Ritz-Canton area.

Coffey County

Aikman & Baker made location for No. 1 Povemire, SW cor. NW SW Section 14-22-13.

Cowley County

Slick, Pryor & Lockhart's No. 2 Sitton, SW cor. NW NW Section 29-31-6, is spudding. Lewis Production Co.'s No. 2 Sitton, NE cor. SE NE Section 30-

(Continued on Page 74)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless marked otherwise)

BARTON COUNTY

Company, farm and location— Remarks:
Skelton Oil Co.'s No. 1 Ott, C SE SE, Sec. 16-19-14w....S.O. 3,225-28 ft.; 3,304-10 ft. wtr.; fishing 3,375 ft.

DICKINSON COUNTY

Severo et al's No. 1 Lavengood, NE SW Sec. 13-13-2.....S.D. 4,752 ft.

EDWARDS COUNTY

Mid-Kansas O. & G. Co.'s No. 1 Converse, SW NE NE Sec. 30-24-18w .....Rig.

ELSWORTH COUNTY

R. Gear et al's No. 1 Sanberth, C SW SE Sec. 29-16-9w...S.D. 50 ft.
Alyward et al's No. 1 Stratman, SE NW SE, Sec. 1-17-10w .....Siliceous 3,255-71 ft.; 117 bbls. 3 hrs. shut in; estimated 2,000 bbls.; no pipe line connections.
Aladin Pet.'s No. 1 Stoddenberg, C SW Sec. 22-16-10w....Siliceous lime 3,332-47 ft.; estimated 1,500 bbls. a day; shut in.

FINNEY COUNTY

National Ref. Co.'s No. 1 Wells, C SW Sec. 13-23-30w...Drlg. 4,425 ft.

HARVEY COUNTY

D. R Louck's No. 1 Regier, SW SE NW Sec. 9-22-3w....Rig.
J. Liggett et al's No. 1 Vessell, NE SW, Sec. 2-23-3w..Location.
Liggett et al's No. 1 Davis, SW SE NE Sec. 7-24-1.....S.D. 2,500 ft.

KINGMAN COUNTY

Panhandle Drlg. Co.'s No. 1 Wetheral, C SE NW SW Sec. 20-28-10w .....S.D. 890 ft.

McPHERSON COUNTY

Detrich et al's No. 1 Sinclair, SE SW, Sec. 25-19-1w....Rig.

MORTON COUNTY

Hydraulic Oil Co.'s No. 1 State Land, NW SE Sec. 22-34-43w .....T.D. 3,640 ft.; temp. abnd.

MORRIS COUNTY

Kostle-Moseley & Hatfield's No. 1 Furney, NE SE Section 16-16-8 .....Spud; S.D.
Urschel et al's No. 1 Bersuch, NW SE NW Sec. 10-17-7..Fishing 915 ft.
Hankerson et al's No. 1 Cessman, SW SE Sec. 24-16-9...S.D. 2,625 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, Sec. 17-4-21w.....Rig.

OSAGE COUNTY

Briggs & Smith's No. 1 Wood, SE NW Sec. 21-14-15.....S.O. 2,190-2,200 ft.; S.D.

PHILLIPS COUNTY

Hall et al's No. 1 Donaldson, C NE NE, Sec. 25-5-18w..Rig.

PRATT COUNTY

Ninnescah O. & G. Co.'s No. 1 Hardesty, SW SE SE, Sec. 28-27-11w .....Rig on ground.

RAWLINS COUNTY

J. G. Durham et al's No. 1 Weaver, SE cor. Sec. 3-3-35w..S.D. 3,925 ft.

RENO COUNTY

Jarvis & Wright's No. 1 Rainbow, NW SE Sec. 33-22-7w..Rig.

RICE COUNTY

J. Liggett et al's No. 1 Thodel, C NW NW, Sec. 11-21-7w.S.D. 50 ft.
Gypsy Oil Co.'s No. 1 Steckel, C NE NW, Sec. 31-19-10w.Sand 3,299-3,324 ft; S.O; S.D.

RUSSELL COUNTY

J. Brennan's No. 1 Waly, CNL E½ NW Sec. 29-13-11w...Rig.
T. Palmer et al's No. 1 Pasek, C SE Sec. 3-14-11w.....Sil. 3,385-3,427 ft.; csg. trouble.

RUSH COUNTY

Skelton et al's No. 1 Brock-Hartman, SW SE NE Sec. 4-18-16w .....S.D. 50 ft.

SALINE COUNTY

Twin Mounds Oil Co.'s No. 1 Weis, C W½ NE NW Sec. 20-13-4w .....Completed U.R. at 2,650 ft.; D.D. 2,665 ft.

SHERIDAN COUNTY

Flo et al's No. 1 Shoemaker, SE SW Sec. 27-7-26w.....Drlg. 4,248 ft.

STEVENS COUNTY

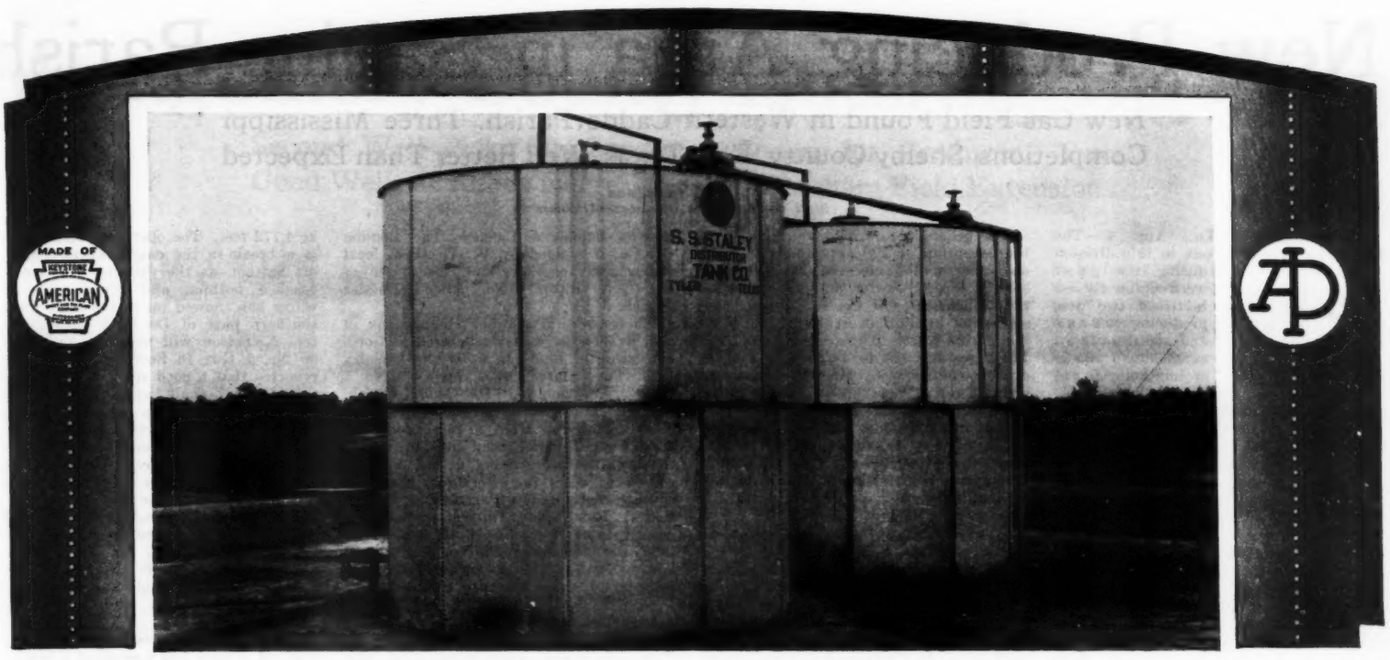
Argus Prod.'s No. 2 Christopher, C NE Sec. 10-33-39w....S.D. 5,521 ft.

SUMNER COUNTY

Trees Oil Co. and Shell's No. 1 Springate, NE SE SW Sec. 6-34-2 .....Fishing 2,320 ft.

WASHINGTON COUNTY

Sincox et al's No. 1 Penwell, NW SE NE Sec. 16-3-3.... Abd. 1,750 ft.



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New Producing Area in Sabine Parish

New Gas Field Found in Western Caddo Parish. Three Mississippi Completions. Shelby County, East Texas, Well Better Than Expected

By J. R. Crumpton
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Apr. 4.—The completion of three tests in this division during the past week definitely established two new producing areas and added quite an extension to another undeveloped gas field. These developments are expected to result in more drilling activity, particularly in North Louisiana, than this district has experienced in several years.

Frank Foster, Inc., completed its No. 1 Stevens, Section 20-9-11, in the northern part of Sabine Parish, with an initial flow of 20,000,000 feet of gas from a total depth of 3,358 feet. The rock pressure registered 1,400 pounds and the gas had a high gasoline content. The test, which is 5½ miles southeast of the Pleasant Hill Field, definitely proves the existence of another producing field in the Sabine uplift of northwest Louisiana. The Langbridge Oil Co. completed the first well in this vicinity in October of last year, and the well has been flowing steadily an average of 35 bbls. daily of 39.5 gravity oil since its completion. The Foster well is 1 mile southwest of the discovery well, and although it is a gasser, the general belief is that it will develop into an oil well as it cleans itself out or is deepened a few feet. Production in this area is coming from the Washita formation of the lower Cretaceous, and the results of the two wells indicates there is probably a series of sands that carry oil or gas or both. This belief is substantiated by the fact that the subsea depth of the gas well is 26 feet lower than the oil well.

The original block of 4,200 acres, with the exception of 120 acres on which the discovery well is located, was recently sold to Frank Foster and associates by the Langbridge Oil Co. for a cash consideration and an overriding royalty on the entire tract. The original well and 120 acres belongs to Pugh & Hickman, drilling contractors. Mr. Foster has announced the sale of some of his individual holdings, consisting of 2,200 acres outside of the 4,200-acre block, and one-half of the royalty on the 720-acre Stevens tract, to the Skelly Oil Co. These developments indicate an intensive drilling campaign for the new area.

Shelby County

In northeastern Shelby County, East Texas, near the Louisiana line, the Oil News' No. 1 Pickering, G. H. Patterson Survey, exceeded the hopes of its backers when put on the pump. Reports from the well state it is pumping 50 bbls. daily of high grade oil. The new producer is south of E. L. Chapman's gas well, completed last year from around the 3,800-foot level, and is in the immediate vicinity of several wells drilled by the Gulf Refining Co. a few years ago. One of the Gulf wells flowed around 52 bbls. daily for several years from a total depth of 3,440 feet. The present test is the only one to succeed in getting shallow pay, production coming from 1,508 feet from what is believed to be the Nacatoch formation.

Western Caddo

In western Caddo Parish, near Blanchard, the Louana Oil Co.'s No. 1 Hammonds, Section 32-19-16, developed an estimated flow of 15,000,000 feet of gas on drill stem test from 2,704-63 feet. The top of the sand was encountered at 2,756 feet, and the operators have set 6⅝-inch casing at 2,740 feet. The test is 1½ miles from the nearest gas production in an area opened more than a year ago by Belchic & Laskey. The Louana Oil Co. is headed by W. E. Hall, local independent operator and discoverer of the Carterville oil field in north Bossier Parish.

There were five other completions in the division in widely scattered sections, consisting of four gas wells and one dry hole. The Calatex Oil & Gas Co.'s No. 1 Hudson, Section 8-16-16, Caddo Parish, had an estimated initial flow of 3,500,000 feet of gas from a total depth of 2,970 feet. The well is in close proximity to several other gassers drilled by this company near the Bethany Field in southwestern Caddo Parish and Panola County, East Texas. Only one completion was reported from the Zwolle chalk rock field, the Ohio Oil Co.'s No. 9 Bowman-Hicks, Section 35-8-12, encountering salt water, and was abandoned at 2,402 feet.

MISSISSIPPI

The Jackson gas field in Mississippi kept up its consistency by turning in three successful completions. In the Hinds County area the Love Petroleum Co.'s No. 1 Interior Lumber Co., Section 2-5n-1e, has an estimated flow of 15,000,000 feet of dry gas from 2,440 feet. In the same county, the Southern Petroleum Co.'s No. 1 Wilson, Section 23-6n-1e, gauged only 1,000,000 feet from a total depth of 2,505 feet. On the Rankin County side of Pearl River, James Alexander, Trustee's No. 1 Ridgeway & McGehee, Section 1-5n-1e, came in with an estimated flow of 30,000,000 feet from 2,327 feet. This well extends the Rankin County area north for one-quarter mile.

Zwolle Area

Another interesting North Louisiana test R. L. Gay, Trustee's No. 1-A Long-Bell Lumber Co., Section 10-8-13, has continued to experience difficulty in drilling in. The test, the deepest yet drilled in the Zwolle area, set 6⅝-inch casing at 4,725 feet with the bottom of the hole at 4,772 feet. The operators believe there is a break in the casing about 300 feet off bottom, as the drill bit has not yet reached bottom, and considerable salt water has showed up in the test. In the southern part of De Soto Parish, Walters Nicholson will make a shallow test on No. 1 Guy in Section 3-11-13. It is reported that a good show of gas was obtained from chalk at 1,675 feet. The Loring Oil Co.'s deep test in the southern part of the Zwolle Field, No. 18 Bowman-Hicks, Section 15-7-12, has drill stem stuck at 4,850 feet. This is the second deep test in this area to penetrate the upper Trinity for gas or oil. On a large block east and north of the eastern producing wing of the Zwolle Field, H. W. Perritt is testing his No. 1 Brown Lumber Co., Section 6-7-10, at 2,385 feet. This operator has made another location on the block, which extends over into Natchitoches Parish.

Natchitoches Parish

W. M. Coates has assembled a block of 14,000 acres in Natchitoches Parish, near Marthaville, and is building derrick in Section 10-9-10 for a test. This wildcat is a few miles north of a test drilled by this operator last year, in which a good show of oil was obtained below 4,000 feet. The Coates block is a few miles northeast of Frank Foster's gas well completed during the past week. In the northern part of Webster Parish, about 3 miles south of the Arkansas line, W. K. Wadley has set 12½-inch casing in his No. 1 Matthews, Section 11-23-9, at 177 feet and is drilling at 550 feet. This test will be watched with interest as it is 200 feet south of the Red Hawk Oil Co.'s wildcat drilled last year and which developed a good show of oil before casing collapsed on a test.

Union County

In Union County, Arkansas, the Drill-

(Continued on Page 58)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYELLES PARISH

Company, farm and location— Remarks:
Stauffer & Eshleman's No. 1 Caruth, Sec. 40-1n-7e ..... Derrick.

BOSSIER PARISH

Dr. W. N. Hankin's No. 1 Newell, 300 ft. S and W, NE cor., Sec. 12-19-11 ..... S.D. 1,890 ft.

CADDO PARISH

Calatex O. & G. Co.'s No. 1 W. B. Hudson, Sec. 8-16-16, 2,640 ft. E, 2,865 ft. NW cor., Sec. ..... Estimated 3,500,000 ft. gas at 2,970 ft.
Louana O. & G. Co.'s No. 1 Hammock, Sec. 32-19-6, 660 ft. N and W, SE cor. ..... Set 6⅝-in. 2,740 ft.
Pyramid O. & G. Co.'s No. 2 Breard, Sec. 9-8-16, 660 ft. S, 1,980 ft. W, NE cor. Sec. ..... Rigging up.

CALDWELL PARISH

Carter Bell's No. 1 Taylor, 150 ft. S, 150 ft. E, NW cor. NE SE, Sec. 17-14-4 ..... S.D. 1,500 ft.
Hudson et al's No. 1 Burton, Sec. 35-12-2e ..... S.D. 2,950 ft.

CATAHOULA PARISH

National Drlg. Co.'s No. 1 Marsh McMiller, 70 ft. N, 100 ft. W, C, Sec. 26-9-6 ..... T.A. 3,097 ft.

DE SOTO PARISH

E. T. Oakes' No. 1 R. H. Bryant et al, 200 ft. N and W, SE cor. NE NW, Sec. 30-13-15 ..... Reaming 3,370 ft.
A. R. Smith's No. 1 Horn, Sec. 16-12-16, NE cor. Sec. ..... Rigged up and S.D.
DeSoto Development Co.'s No. 1 Nickey, Sec. 7-13-12 ..... Derrick.
Walters-Nicholson, tr.'s No. 1 Jim Guy, Sec. 3-11-13 ..... Arranging to test 1,675 ft. (corrected).

GRANT PARISH

Security Pet. Corp.'s No. 1 Swope est., Sec. 16-9-1e, 1,698 ft. N, 220 ft. E, SW cor. Sec. ..... Derrick.

MOREHOUSE PARISH

United Gas Public Service Co.'s No. 2 Sandidge, Sec. 11-20n-4e, 656 ft. S, 1,332 ft. W, NE cor. NW ..... S.D. 2,132 ft.

NATCHITOCHES PARISH

W. M. Coates' No. 1 Ross Olive, Sec. 10-9-10, 660 ft. S and E from cen. of Sec. ..... Location.
Dr. H. S. Gerson's No. 1 Smith, Sec. 11-10-8, 2,000 ft. N, NE cor. of irregular Sec. 10, in Sec. 11 ..... Arranging to deepen 585 ft.
R. A. Keaton's No. 1 Stephens, Sec. 25-10-6, 320 ft. N and W, SE cor. NW NW ..... S.D. 178 ft.
H. W. Perritt's No. 2 Brown Lbr. Co., Sec. 30-7-9, 300 ft. S and E, NW cor. NW SE ..... Location.

OUACHITA PARISH

Wilson & Mitchell's No. 1 Williams, Sec. 5-16-1,e 330 ft. E, 240 ft. S, NW cor. SW SE ..... Set 6-in. 2,655 ft; T.D. 2,666 ft.

RED RIVER PARISH

La. Oil Dev. Co.'s No. 2 La. Delta Pecan Co., 2,950 ft. S, 300 ft. E, NW cor., Sec. 27-13-11 ..... Spudded and S.D. 50 ft.

(Continued on Page 50)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

CADDO PARISH—PINE ISLAND

Company, farm and location— Remarks:
Simplex Oil Co.'s No. 1 Youree-Glassell, 500 ft. N and E, C, Sec. 13-20-15 ..... S.D. 2,375 ft.

OUACHITA PARISH

Carbon Cons.' No. 7 Guthrie, Sec. 50-20n-4e, 5,263 ft. N, 7,475 ft. W of cors. of Secs. 25, 26 and 49, in Sec. 50 ..... Location.

SABINE PARISH—ZWOLLE

O. J. Baird's No. 2 Duggan, Sec. 14-7-11, 200 ft. S and E from cen. Sec. ..... Location.
Coates Pet. Co.'s No. 2 McNeely, Sec. 14-7-11, 250 ft. S and W, NE cor. NW NE ..... Derrick.
Hawkins & Antoon's No. 1 Newton, Sec. 1-7-11 ..... W.O.S.R. 2,609 ft.
Hudson & Bird's No. 1 Walden, 480 ft. N, 300 ft. E, SW cor. SW NE, Sec. 26-8-11 ..... S.D. 2,454 ft.
Zeke Lohman's No. 1 McCormick, 660 ft. E, 330 ft. N, SW cor. NE SW, Sec. 2-7-11 ..... S.D. 2,508 ft.
Loring Oil Co.'s No. 18 Bowman-Hicks, 1,280 ft. S, 275 ft. E, NW cor. SW NW, Sec. 15-7-12 ..... D.S. stuck 4,850 ft.
Ben Merritt, tr.'s No. 2 Byrd, Sec. 1-7-11 ..... S.D; W.O. 2,579 ft.
Pelican Nat. Gas Co.'s No. 11 La. Long Leaf Lbr. Co., Sec. 10-7-11, 330 ft. N and W, SE cor. NE NW .... W.O.S.R. 2,592 ft.
Ohio Oil Co.'s No. 9 Bowman-Hicks, Sec. 35-8-12, 350 ft. N, 330 ft. E, SW cor. NW SE ..... S.W. and abd. 2,402 ft.
Sabine Prod. Co.'s No. 3 Pearce, Sec. 10-7-11, 330 ft. S and E, NW cor. SE NW ..... Rigging up.
Stovall Drlg. Co.'s No. 3 Nulton, 330 ft. N and W, SE cor. SE NE, Sec. 2-7-13 ..... Location.

UNION PARISH

Southern Carbon Co.'s No. 58 fee, Sec. 17-20-4e, 1,557 ft. W, 1,320 ft. S, NE cor. Sec. ..... Set 8-in. 802 ft; drlg. 1,470 ft.

ARKANSAS

UNION COUNTY—EL DORADO

Lion O. & R. Co.'s No. 3-A O. P. Hayes, 242 ft. S, 246 ft. W, NE cor. Lot 5, NE, Sec. 4-16-15 ..... S.D. 7,255 ft.
Southern Prod. Co.'s No. 1 Wingfield, NE cor. SE NW, Sec. 16-19-15 ..... Coring 2,735 ft.

UNION COUNTY—URBANA

Marine Oil Co.'s No. 1 Winn est., 330 ft. S and E, NE cor. S½ NW, Sec. 11-18-13 ..... T.A. 3,586 ft.
Marine Oil Co.'s No. 2-E Thompson, 330 ft. N, 330 ft. E, SW cor. NE NE, Sec. 10-18-13 ..... Location.
Wilson & Chapman's No. 1-B Hadley, Sec. 3-18-13, 330 ft. S and W, NE cor. SE NW ..... T.A. 3,545 ft.

EAST TEXAS

PANOLA COUNTY

Daisy O. & G. Co.'s No. 1 Rucks, John Palmer Sur. .... T.A. 2,194 ft.
Nat. Gas Prod. Co.'s No. 1 Cadenhead, 5,219 ft. N, 5,620 ft. E, SW cor. B. C. Jordan Sur. ..... Set 12¼-in. 40 ft.

(Continued on Page 51)

Montgomery County Entering Big Play

Second Well Picks Up Sand and Shows for Producer. Two Good Wells at Rabbs Ridge. Possible Markham Field Extensions

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Apr. 4.—The fever of an oil boom finally has settled on Montgomery County with active trading of leases and royalty and drilling development actually getting under way in earnest. A period of marking time which has existed since Strake Oil Corp. brought in a rank wildcat producer in the Theodore Slade Survey southeast of the town of Conroe last December evidently has been broken and a new play of considerable extent, one not witnessed by the industry since the discovery of East Texas, seems in sight.

This activity which has sprung up since the recent trade between Humble Oil & Refining Co. and Strake Oil Corp. providing for the development and proving up of the latter's South Texas Development Co. leases, on which the discovery well is located, was stimulated the past week when Heep Oil Corp.'s No. 1 Cartwright, 1¼ miles to the northeast of the Strake well picked up the sand and showed for a producer.

The Heep test over the week-end was standing cemented and intense interest is centered in the outcome of a test which probably will be made before the middle of this week. Although there are many different reports as to the depths, fairly authoritative information gives the top of the formation, a broken shale and sand, at 4,956 feet and bottom of hole at 5,053 feet. The main showing was in a sand at 4,986-91 feet and 6⅝-inch casing was run to approximately 4,960 feet.

Due to the variance of reports occasioned by the fact that direct information has been withheld, it has been difficult to determine how the Heep well has run structurally with the Strake producer. Bottom of the latter is 4,991 feet with 67 feet and 7 inches of sand and shale being taken in for production. Showings were encountered from 4,900 feet to the bottom but the upper portion was cased and blanked off to shut off heavy gas pressure. In surface elevation, the Heep well is 25 feet higher, it being 224 feet above sea level as against the Strake well at 199 feet.

The Heep well is the first test which has been drilled in the district since the completion of the discovery well last December so much is banked on it to determine something of the structural conditions and trends. The territory is entirely virgin and virtually nothing is known geologically of the county, which is one of a group of unproductive and little drilled counties between the coastal dome district and East Texas. About the only guide there has been so far to trading has been hunches.

Scramble for Leases

Leasing the past week, however, has turned into a sort of scramble with Conroe, the county seat and closest town to the Strake well, being a mecca for lease "hounds" who have come from as far as Wyoming. As is usual in boom plays, there are a lot of wild rumors and reports of trades involving large considerations and drilling obligations. However, leases and blocks are being taken in all directions out of the Conroe district and it is known that as much as $20 an acre has been paid for some leases even as far as 10 miles from the Strake well. Closer in land has been bringing as much as $75 to $100 an acre.

Considering trades which actually have been made, at least a dozen new rigs will be running in the Conroe district within the next two months with a half dozen operations now starting up or due to begin at once. As many as a couple of dozen tests actually have been guaranteed for the area although all these are not to be drilled at the same time.

Strake Oil Corp. already is ready to start drilling in its second test, No. 2 South Texas Development Co., one of a series of at least six tests provided in Humble Oil & Refining Co.'s trade. This test is 1,550 feet to the south of No. 1, located in Lot 88, in the Theodore Slade Survey.

Derrick in for Another

Heep Oil Corp. also has derrick in for No. 1 Roberts, located 450 feet out of the southeast corner of the Mrs. M. E. Roberts tract in the William H. Harrison Survey. The latter is 2½ miles northeast of the Strake discovery well and 1¾ miles to the north of the Heep Cartwright well, which now is in the sand and due to be tested. The same company has a drilling obligation on the east 232.5-acre piece out of the George Hamman 465-acre tract in the Charles B. Stewart Survey, just south of the Strake South Texas Development Co. land. A location, which probably will be in the northeast corner will be 1¼ miles south and west of the discovery well. A test on this tract is looked forward to with interest.

A group of Fort Worth operators also has just leased the 3,573-acre W. Sealey property in the Jonathan C. Pitts Survey, between 3 and 4 miles northeast of Conroe and has put up $10,000 forfeit money for the drilling of two tests. Several miles southeast of Conroe, another group has taken a block comprising the T.&N.O. Surveys Nos. 3, 11, 9 and 13 and the Springfield Survey, on which a test is obligated. This is in what is known as the Outlaw Dome district (Section 41). In the same immediate vicinity J. M. West recently took approximately 1,500 acres.

Several Trades

Another important trade was that in which Ed Parsons and associates of Fort Worth acquired approximately 3,700 acres in the Willis district, approximately 12 miles to the north and west of Conroe. The nucleus for this was the block acquired from the Rycade Oil Corp., holdings of which are being liquidated. The block, located chiefly in the John Kronkrite Survey, is composed of the two leaseholds of H. P. Drought and A. M. Carson. Several years ago, Rycade Oil Corp. drilled a series of 11 core tests but before the drilling of a deep test, the company was dissolved. The Parsons trade included virtually all the Drought property and 553 acres out of Carson land as well as additional smaller tracts. Two tests are obligated, one on the Drought land and the other on the Carson tract. Location for the first probably will be made during the next few days.

Another group of operators has leased 249 acres of the Conroe land in the J. G. Smith and A. McCown Surveys just north of the South Texas Development Co. property held by Strake Oil Corp. On these three wells, one to hold each 80 acres, are obligated and $8,000 cash bonus was placed.

West of Conroe, Wilhite and associates have started up operations in their No. 2 Juergus, D. James Survey. This test was abandoned last July after drilling to 4,890 feet. The test is more generally known under the name of Kelley-Baker, which operators started the hole and whose block was taken over by the Wilhite group. The latter operators also are drilling another test, known as the Pevehouse Oil Co.'s No. 1 Sealey, located in the James Pevehouse Survey, 5 miles southwest of Conroe.

Rabbs Ridge

Operations in the salt dome district were featured by the completion of two additional good producers at Rabbs Ridge, Fort Bend County, which field recently figured in an important trade whereby the Humble Oil & Refining Co. acquired Cullen & West's half interest. The new wells marked important extensions to the producing area of the 5,200-foot sand. One of the wells, No. 3 George, was completed by Humble flowing 77 bbls. an hour through a three-eighths inch choke from sand at a total depth of 5,225 feet. It is 1,000 feet east of production. The other well, completed by Gulf Production Co., which holds the other half interest in the field with Humble, was No. 1 T. R. Booth. It extended the field more than 800 feet north, coming in flowing

(Continued on Page 56)

GULF COAST FIELDS AND WILDCATS

Week Ending April 2

BARBERS HILL—CHAMBERS COUNTY

Company, farm and location—	Remarks:
Bashara Oil Co.'s No. 2 Tarbutton, Henry Griffith League, 25 ft. W of Texas Gulf Producing Co.'s No. 2 Tarbutton	Set 20 ft. of 7-in. screen 3,634 ft.; rig up to pump.
R. E. Ferrell's No. 2 Wilburn, Henry Griffith League, 215 ft. W of No. 1 in center of 45-acre tract	Waiting cement to set 1,870 ft.
Gulf Prod. Co.'s No. 7 Wilburn, Henry Griffith League, 177 ft. W of No. 6	Set 22 ft. of 5-in. screen 4,364 ft.; comp. flowing 1,200 bbls. PL oil, 295 lbs. pressure, two ⅝-in. chokes.
McAlbert Oil Co.'s No. 2-B Higgins, Wm. Hodges Sur., 265 ft. from N line and 50 ft. from W line of tract	Drlg. broken sand and shale at 725 ft.
Mills Bennett Prod. Co.'s No. 1-B Gulf fee, Wm. Bloodgood Sur., 500 ft. E and 50 ft. N of SW cor. of "B" lease	Drlg. salt 2,259 ft.; top of salt 1,706 ft.
Mills Bennett Prod. Co.'s No. 2 J. C. Means, Henry Griffith Sur., 300 ft. W of No. 2 in center of strip	Drlg. salt 1,484 ft.; top of salt 1,425 ft.
Rio Bravo Oil Co.'s No. 3 Fisher, Wm. Bloodgood Sur., 300 ft. E and 33 ft. S of NW cor. of tract	Rig.
Sinclair Oil & Gas Co.'s No. 12 Wilburn, Wm. Hodges Sur., 150 ft. W of No. 10 and 50 ft. N of S line	Spudded.
Sun Oil Co.'s No. 14 J. Wilburn, Henry Hodges Sur., 150 ft. W of No. 12 and 50 ft. from N line	Rock 1,078 ft.; losing returns.
The Texas Company's No. 6 Wilburn (D.D.), Henry Griffith League	Pulling liner to deepen 5,000 ft.
Texas Gulf Producing Co.'s No. 1 Scott Fitzgerald, 125 ft. from S line and 71 ft. from E line of Strip No. 1, Henry, Griffith League	Sand 5,258-78 ft.; cmtd. 7-in. csg. at 5,251 ft.
Texas Gulf Producing Co.'s No. 9-B Kirby, Henry Griffith League, 50 ft. out of SW cor. of J. M. Fitzgerald 50-acre tract and 110 ft. S of N line of Kirby tract	Salt 2,097 ft.; set 9⅝-in. csg.
Texas Gulf Producing Co.'s No. 6-H Kirby (W.O.), H. Griffith League	Set 65 ft. of 5 3-16 in. screen 5,288 ft.; comp. flowing 1,700 bbls. PL oil, 200 lbs. pressure; ⅝-in. choke.
Texas Gulf Producing Co.'s No. 7-A Barber, Henry Griffith League, 712 ft. from W line and 225 ft. from N line of tract	Rock 2,432 ft.; cmtd. 13⅜-in. csg. on bottom.

DAMON MOUND—BRAZORIA COUNTY

Intercoastal Oil Co.'s No. 9 Wisdom, S 45 deg. 312 ft. from NE cor. Lot C, Blk. 63, A. Darst Sur., and thence S 45 deg. 325 ft. in Lot A	Drlg. rock 2,512 ft.
The Texas Company's No. 2 Cave, 165 ft. NE and 55 ft. N, 45 deg. W from S cor. Lot B, Blk. 73, Wisdom Subd., A. Darst Sur.	Heaving shale 3,977 ft.; washing to bottom.

BLUE RIDGE—FORT BEND COUNTY

Gulf Prod. Co.'s No. 19 Luscher, Thos. Habermacher Sur., 1,650 ft. from N line and 550 ft. from E line of 490-acre tract	Drlg. hard sand 4,272 ft.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 32 Moore, Jas. Frazier Sur., N of No. 20	Drlg. shale 3,264 ft.

RABBS RIDGE—FORT BEND COUNTY

Gulf Prod. Co.'s No. 1 T. R. Booth, Samuel Kennedy Sur., 475 ft. N of S line of Booth 475-acre tract, due N offset No. 1 Booth-Meyers	Set screen 5,176 ft.; comp. flowing 1,300 bbls. PL oil, 645 lbs. pressure, ⅝-in. choke.
Gulf Prod. Co. and Humble Oil & Ref. Co.'s No. 2 Booth, Samuel Kennedy Sur., 475 ft. from S line and 600 ft. E of No. 1	Derrick.
Gulf Prod. Co. and Humble Oil & Ref. Co.'s No. 3 Booth-Meyers, John Rabb Sur., 1,500 ft. E of No. 2	Location.
Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 3 George, John Rabb Sur., 1,000 ft. due E of No. 2	Set screen 5,225 ft.; comp. flowing 77 bbls. per hour, ⅝-in. choke.
Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 3 Lockwood, John Rabb Sur., 1,000 ft. due E of No. 2	Location.
Humble Oil & Ref. Co. and Gulf Prod. Co.'s No. 2-B Lockwood & Sharp, John Rabb Sur., 600 ft. W of No. 1-B	Location.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 26 Cade, N. Fitzsimmons Sur., 600 ft. S of No. 24	Cored sand 4,595 ft.
Yount Lee Oil Co.'s No. 27 Cade, N. Fitzsimmons Sur., 600 ft. N of No. 21 in line with Nos. 22 and 23	Drlg. hard sand 3,614 ft.
Yount Lee Oil Co.'s No. 1 Broussard & Orme, 300 ft. E of N cor. of N. Fitzsimmons Sur., in Martin Dunman Sur.	Drlg. hard sand 4,880 ft.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 133-A "B"	Comp. pumping 10 bbls. net oil 517 ft.
Rio Bravo Oil Co.'s No. 133-A "B"	Drlg. sand and shale 156 ft.

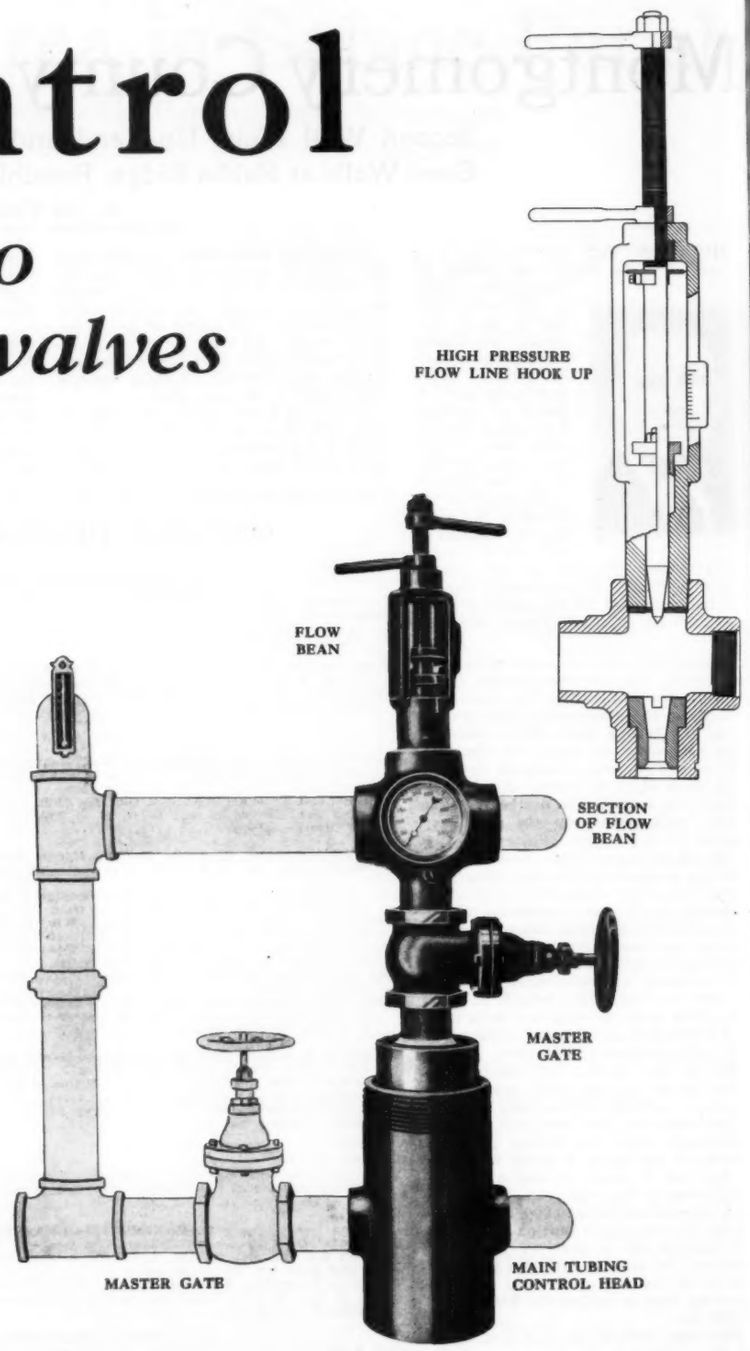
(Continued on Page 48)

Control

with two master valves

Using only two master valves, Brewster has designed a Control System for East Texas wells. The Flow-Bean, or Control Valve, functions as a complete shut-off, an exclusive feature in the design of the Control Head to conserve the gas. By having the gas entirely cased off between the casing and the tubing, no gas comes through the flow lines, thus assuring a longer flow of the well.

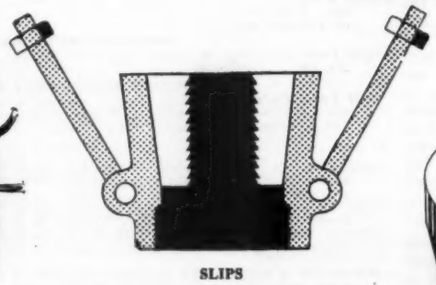
The Brewster Tubing Head and Flow-Bean are made from Chrome Nickel Steel, tested at 3,000 pounds working pressure.



The Brewster COMPANY~INC.

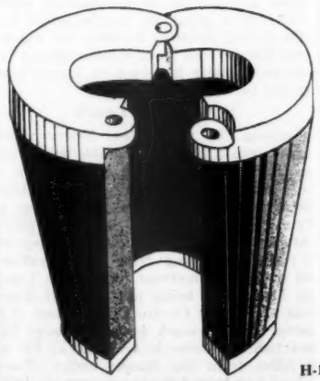
Shreveport, Louisiana

Warehouses: The Iverson Specialty Co., Oklahoma City, Phone 2-2833; The Brewster Houston Store, 2000 Harrington St., Capitol 2031; Longview, Texas, 313 E. Cotton St., Phone 781. *Export Distributors:* Acme Well Supply Co., Inc., 136 Liberty St., New York City.



SLIPS

BREWSTER TUBING CONTROL HEADS. To keep the well under control at all times Brewster has designed the Tubing Control Head. This Control Head is made of Chrome Nickel Steel, tested under 3,000 pounds working pressure. A Slip Bowl is used with slips for any sized tubing and a full opening is provided for drilling through and passing Tube Catcher. Also a Blow-Out preventer is furnished to fit in the Slip Bowl.



BLOW-OUT PREVENTER

H-1

New Mexico Suit May Test Proration

Drilling Program Expected to Be Resumed in Greasewood Area, Northeastern Colorado. Good Show of Gas in Archuleta County

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Apr. 4.—The Hobbs Townsite Co. has filed a suit against the Midwest Refining Co. in which it seeks to recover $556,000 damages for alleged failure of the company to produce its No. 29 Turner at capacity and to drill one well to each 10 acres in the tract. The suit indirectly aims at proration in the field. Other suits have been filed against the Landreth Production Co., the Skelly Oil Co., the Shell Petroleum Corp., and the Amerada Petroleum Corp. Drilling has been resumed in the north part of the field as a result of an outside location made by the Amerada Petroleum Corp. The Midwest also made a location in the southeastern part. R. D. Compton is drilling in his No. 4 Brainard in Eddy County as a producer. One test was spudded in Curry County.

A drilling program in the Greasewood area in Colorado is expected to be announced within a few days. Operators are considering the possibilities of the Hygiene horizon in that territory. A good show of gas was encountered at 256 feet in Archuleta County. Operations are being resumed on the Fountain Dome in El Paso County.

Wyoming had no new locations or completions and one well was ready to begin spudding.

Rotary equipment is being moved in for an oil test to the southwest of the Cut Bank gas field in Montana. Nothing of importance was found in the Frontier in the Ohio Oil Co.'s wildcat on the Golden Dome and the hole is being continued to its objective in the Dakota.

NEW MEXICO

Five suits indirectly aiming at proration in the Hobbs Pool and which may raise important questions affecting proration in Mid-Continent and other fields have been filed in New Mexico. Other suits by royalty owners against operating companies in the Hobbs Pool are rumored, although only five have so far been placed on record. The first suit was filed in the state district court at Lovington by the Hobbs Townsite Co. against the Midwest Refining Co. in which damages aggregating approximately $556,000 are sought. This suit has been transferred to the Federal District Court at Santa Fe. The other four suits were brought by royalty owners against the Landreth Production Co., the Skelly Oil Co., the Shell Petroleum Corp., and the Amerada Petroleum Corp., and all are based on practically the same type of complaints.

The action against the Midwest hinges around the drilling of its No. 29 Turner, C SW SW, Section 34-18-38, in the Hobbs townsite and in the southeastern part of the field. This well was completed in January, 1931, and was given a potential rating of 21,352 bbls. daily on a gauging under the supervision of the umpire. It was shut in, however, until last fall when it was placed on production and allowed to produce its pro rata share of the total daily allowable for the field. The other four suits name as plaintiffs the holders of other leases on the Turner tract.

The suit against the Midwest company names three causes of action. The first alleges that if this well had been produced at capacity since its completion that it would have yielded the Townsite company approximately $56,000 in royalties at the prevailing posted price of crude. The second cause of action is the allegation that the company has failed to develop the quantity of oil the lease might have produced if one well had been drilled on each 10 acres as implied in the lease, instead of one well to the 40 acres, the prevailing practice in the field. Damages claimed for this cause are approximately $400,000. The third cause alleges that this acreage is part of one oil pool and that the taking of oil from other wells in the pool has diminished the power of the land to produce and that it was the duty of the company to drill the acreage and keep the oil from migrating. Damages sought in this cause amount to $100,000, bringing the total damages sought in this one action to $556,000. The suits against the Skelly, Amerada, Landreth and Shell companies also seek damages for lesser amounts on the same grounds, their holdings being smaller.

The Midwest company, in transferring the suit to the Federal District Court, has been given 30 days to file a transcript of the record and 30 days in which to plead. Therefore, it probably will be some time before a decision is reached. The practice of spacing wells one to each 40 acres has been in effect almost from the beginning of the development of the field, and has been followed except in a few instances. If this practice should be upset by court order, it would require approximately 64 wells to completely drill up the Turner lease, should the east side be proven productive, and a large number of offsets also would have to be drilled. The issue as to the spacing of wells may easily become an important question in other fields where drilling has been limited. Equally important is the question of liability for damages where such drilling has not taken place. All the wells in the Hobbs Pool have never been produced at capacity at the same time even for a single day for test purposes. The potential production of wells is a matter of calculation based on a few hours' test following completion. It is a generally recognized fact that these wells would not hold up to these pontentials under prolonged production.

Lea County

Drilling operations in the Hobbs Pool, which have been at a standstill since early last summer, with the exception of wells drilled in the southeastern part of the field, are being renewed as a result of a location made by the Amerada Petroleum Corp. This location is in the SW cor., Section 18-18-38, on the Boon Hardin tract, 330 feet from the south and west lines. Cellar is being dug and materials are being moved in. This is an outside well on the extreme north, being half a mile north of the Empire Gas & Fuel Co.'s No. 2 Hardin and the Gypsy Oil Co.'s No. 1 Graham. It is approximately the same distance to the northwest of Empire's No. 3 Hardin and 1¼ miles southwest of Landreth Production Co.'s test which defined the edge of the pool in that direction. The Empire, Shell and Gypsy companies have offset acreage.

The Midest Refining Co. also has made a new location, No. 8 Terry, C NW SW, Section 10-19-36, an inside well, but which will call for some offsetting on acreage controlled by the same company.

Midwest Refining Co.'s No. 29 State, C SW SW, Section 10-19-38, recemented 16-inch at 143 feet and is drilling plug. Same company's No. 8 Turner, C NW SW, Section 34-18-38, is drilling at 3,644 feet in anhydrite. It topped brown lime at 2,830 feet and had the first gas at 2,897 feet and first oil at 2,945 feet. There were good shows of oil and gas at 3,202-12 feet and a considerable increase in both at 3,569 feet.

Western Drilling Co. and Western Production Co.'s No. 1 State, C SW NE, Section 15-18-37, to the northwest of production, is an abandoned location. Rig was completed more than a year ago and water well was drilled, but it did not spud.

Eddy County

R. D. Compton's No. 4 Brainard, SE SE, Section 5-18-27, Artesia area, which resumed recently at 1,217 feet after a government lease was issued, is preparing to drill in and looks like a producer. It is bottomed at 1,274 feet, at which depth it reached the top of the sand. Oil rose 75 feet in 25 minutes. It is an offset to No. 3 Brainard, a producer.

Avalon Oil Co.'s No. 1 State (Paul), NE cor. SE, Section 26-20-27, formerly carried as Flynn, Welch & Yates, spudded March 18 and is drilling at 200 feet in gypsum and red beds. So far no water has been encountered. This location is southwest of the Getty Pool. Flynn, Welch & Yates are reported to have a 60 per cent interest in the operation.

Grayburg Oil Co.'s No. 3 Burch, C SW NW, Section 19-17-30, Jackson area, is drilling at 2,435 feet in gray lime.

Curry County

G. W. Trout and others' No. 1 Hart estate, NW SW NW, Section 24-2n-31, the first operation in Curry County for a long time, spudded March 7 and is shut down at 570 feet to repair machine. It will be drilled to the Santa Rosa formation for water. The deep test will be drilled in Section 19-2n-32.

Bernalillo County

Norins Realty Co., Inc.'s No. 1 Pajarito, NW cor. NE, Section 22-9n-1e, is bottomed at 1,275 feet and fishing for 12½-inch casing.

Guadalupe County

New Mexico Producing & Refining Co., Ltd.'s No. 1 McMullen, SW cor., Section 24-5n-16, Mesa Leon district, is drilling at 4,330 feet in lime. It had some water at 4,170 feet.

San Juan County

Continental Oil Co.'s No. 24, SW NW SW, Section 1-29-19, Rattlesnake Dome, is bottomed at 6,923 feet, waiting for 8⅝-inch core barrel. Last core was taken at 6,917-23 feet. Its No. 17, C NE, Section 2-29-19, the discovery well, which was deepened to 6,985 feet and plugged back, is swabbing at 6,500 feet. The hole fills approximately 250 feet per hour. Continental's No. 28, CNL SW, Section 12-29-19, on the south end of the structure where little drilling has taken place, had a show of oil at 748-49 feet and is preparing to mud and run casing before drilling in. The sands in the Dakota are the objectives in this well. It is on the extreme southern nose of the second contour from the top.

COLORADO

While drilling operations in northeastern Colorado are at a standstill, this condition is not expected to last much longer. Some definite and important announcements are expected within a few days, especially in regard to a drilling program in the Greasewood area, and these are awaiting only the signatures to the agreements. The full extent of the wildcatting in that part of the State this summer is not yet definitely known, but it will not be a surprise if it exceeds that of 1931. When four widely scattered wildcats in Weld and Morgan Counties were aban-

(Continued on Page 58)

HEAVY WET GAS FLOW FOUND IN SOUTH TURNER VALLEY WELL

By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Apr. 2.—In the Home section of the South Turner Valley Field, Wellington Oil & Gas Co.'s No. 1, LSD 1, Section 20-19-2w5, has been deepened 30 feet into the lime, encountering a heavy wet gas flow at around 4,990 feet. Measurements by government officials placed the initial flow at 32,500,000 feet a day, making it one of the largest wet gas producers in the field. Wellington's No. 1 was originally brought in two or three years ago with an initial flow of 18,000,000 feet from the Madison lime. Production was taken from this level for a while, after which the hole was carried a little deeper, to restore the flow. Recently it was decided to clean out and deepen the hole with the result that the big flow was struck about 30 feet below the old bottom, and about 315 feet in the lime. The well had previously been making about 45 bbls. of crude naphtha per day, and it is expected the recovery from the increased flow will run between 100 and 125 bbls. The crude naphtha recovery is now being tested.

Wellington's No. 1 is in the SE cor., Section 20-19-2w5, and some distance south of the famous Home wells. At one time this section was the most prolific in the entire Turner Valley Field, several of the Home wells making crude naphtha recovery between 600 and 900 bbls. for a time and being rated as "million dollar wells." With more intensive drilling, the production from the tract fell off, and some of the more recent completions in the north end of the section secured only negligible results; while production of the four Home wells in February aggregated only 2,086 bbls. Wellington Oil & Gas Co. several years ago made location for its No. 2 test in the same LSD, but owing to general conditions the second test never started drilling.

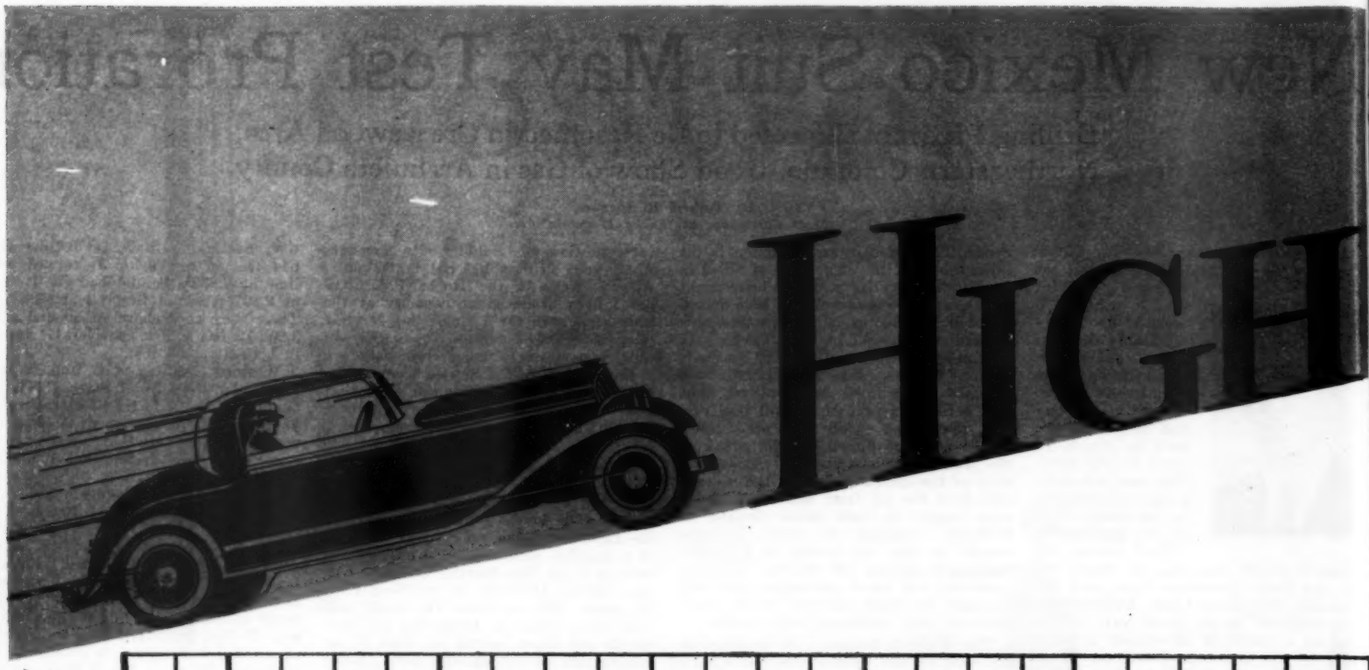
Border Fields

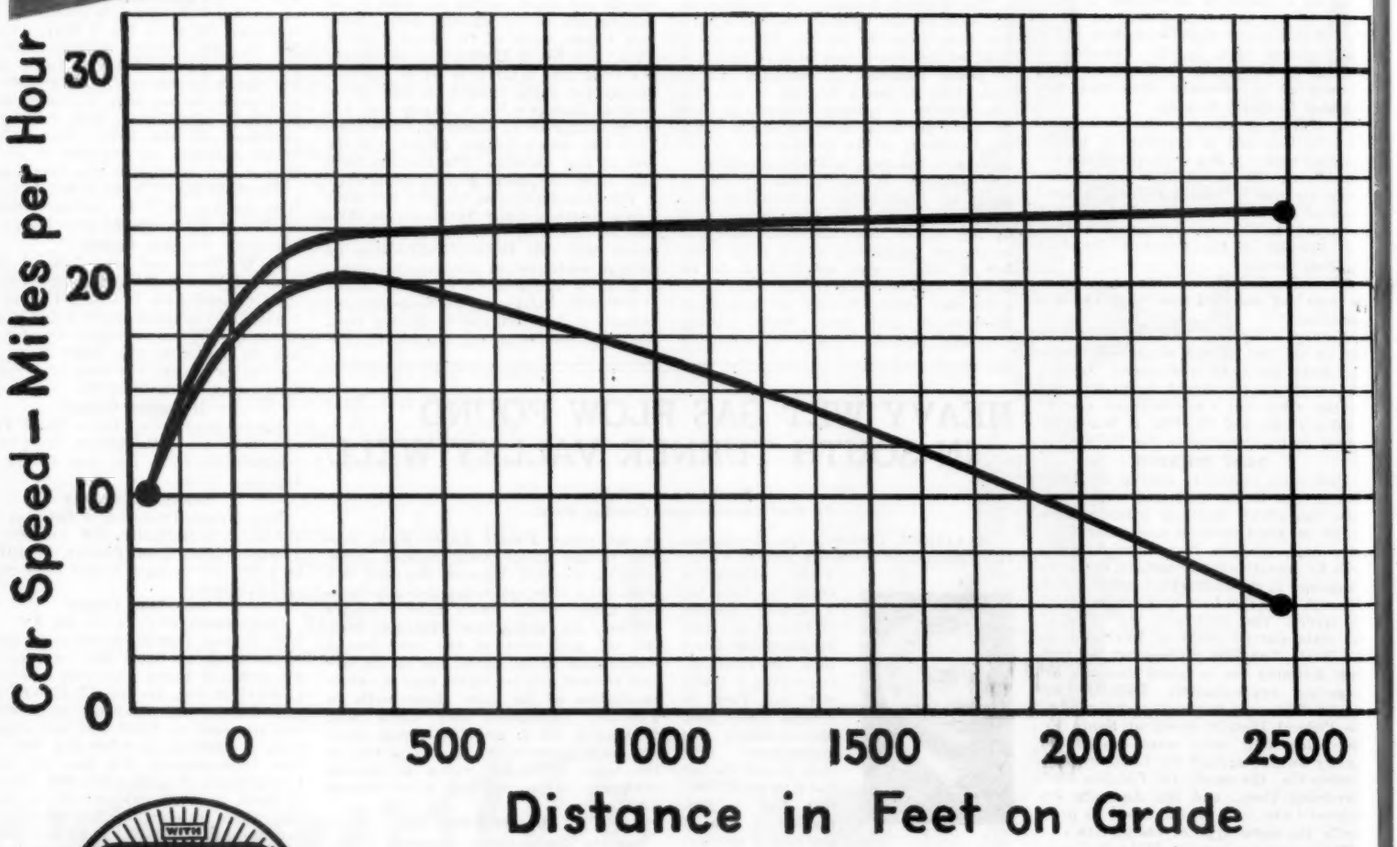
On the Twin River structure southeast of Lethbridge, Parco Oil Co.'s No. 1 has cemented off a small water intrusion and is reported starting another pumping test to determine results of the recent shot. The previous flow from the top of the Madison lime around 3,890 feet was reported at around 10 bbls. a day.

No new work is being started on the Lethbridge structure, where Texas-Imperial's No. 1 wildcat, LSD 14, Section 22-8-22w4, struck a heavy salt water flow in the Madison at 4,574 feet after getting a noncommercial show of crude oil in the top of that formation at 4,551 feet. No. 1 has been definitely abandoned. A statement issued by The Texas Oil Company of Canada, jointly interested with Imperial Oil, Ltd., in the test, says:

"The joint deep test drilled on this

(Continued on Page 74)





WITH ETHYL BRAND OF ANTI-KNOCK COMPOUND
ETHYL GASOLINE CORPORATION NEW YORK, U.S.A.
Controls Combustion

12% GRADE REVEALS STRIKING DIFFERENCE IN PERFORMANCE. Two cars of identical size, weight, and engine equipment *except* for cylinder heads approached the test hill in high gear, running side by side at ten miles per hour. At a given point just before reaching the grade both accelerated to the full power of the engine. The graph above tells the story of car speeds after that point. The car with the higher compression head (5.6 to 1) reached a speed of twenty-two and a half miles per hour soon after starting up the climb. Thereafter it maintained that speed (with slight acceleration) until the top of the hill was reached. The car with the lower compression head (4.8 to 1) reached a speed of twenty miles an hour BUT then lost speed steadily until at the top of the hill it was moving a bare five miles per hour.

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ETHYL GASOLINE

COMPRESSION— Makes the Grade

AUTOMOBILE sales during the past two years have emphasized the importance of performance. Better performance sells cars. Better performance in new cars is putting older models out of date.

The outstanding sales lesson of the past three years in both the automobile and the gasoline industry is this: *The American public is willing to pay for performance.*

A staff writer of the Oil and Gas Journal quoted the president of a leading automobile manufacturing company as estimating "that 2,000,000 automobiles will be bought in 1932—and that the feature of the 1932 automobile engine will be a higher compression ratio. Refiners looking beyond 1932, 'when times will surely be better,' may give thought to the recently released figures which show that about 13,000,000 of the automobiles now in operation are at least five years old."

The fact is that nearly every major car manufacturer in the country is now offering either a standard high compression line or optional high compression heads. The competitive superiority of these cars is going to make old cars and *some new cars* look pretty bad on the basis of comparative performance—unanswerable argument on the road.

The hill-climbing test illustrated above is a fair example. It reveals the relative merits of the standard low compression head and the optional high compression head now being sold by a manufacturer of light weight cars. With the 4.8 to 1 head this car loses speed quickly on a 12% grade and is forced to shift gears. With a 5.6 to 1 head the same car maintains its speed and gains slightly. That all increases in compression produce corresponding improvements has been demonstrated repeatedly in cars of every price class.

The day of high compression is here—true—but high noon of that day is still distant enough to present competitive opportunity to those manufacturers who take greater advantage of high compression now. Proper fuel is already universally distributed and regularly used by a large share of the potential customers for *your* new model.

The survey recently completed by the U. S. Bureau of Mines shows that the average anti-knock rating of premium priced fuels has increased appreciably since a similar survey one year ago.

Ethyl fluid contains lead

On March 1, 1932, the minimum anti-knock standard of Ethyl Gasoline was raised to a new level. The new Ethyl Gasoline has sufficient anti-knock quality to develop the maximum performance of engines of considerably higher compression ratio than even the high average of 1932 models.

New Standard for Ethyl Gasoline Announced

As you read this, gasoline pumps throughout North America bearing the Ethyl emblem are being filled with Ethyl Gasoline of an even higher standard of quality.

The anti-knock standard of Ethyl has been raised to meet the peak requirements of the super-high compression motors the automobile industry is now selling. It brings out the *full* performance of the highest compression engines on the market today.

Gas Completions Mostly in Central West

Central Ohio Field Has Seven and One Dry Hole. Good Oil Well in Indiana. Few Completions in Kentucky Fields

By George A. Whitney
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Apr. 4.—Numerous wells were brought in during the week, but none of any real consequence so far as oil production was concerned. In the old Lima Field of northwestern Ohio, Dillon & McFrederick, Cleveland operators, brought in a 5-bbl. pumper on the H. A. Goldbrath farm, Section 29, Monclova Township, Lucas County, west of Toledo. Joe Doblinger is drilling on the Solomon Betts farm, Section 8, same township, also starting a test on the Knausse farm, same section.

In the Tiffin Field, Hopewell Township, Seneca County, the Tiffin Industrial Gas Co. has a light gas well in a second test on the Frank Feasel farm, Section 2, and the Sandusky Gas Co. struck a light gas well on the Lloyd Hoover farm, Section 3, same township. J. H. Murphy & Sons are drilling on the Ray Knepper farm, Section 11, same township, also on the Fay E. Sparks farm, same section. L. Curry is drilling on the Lloyd Hoover farm, Section 34, Liberty Township, same county.

In Shelby County, Rucker Oil Co.'s test on the William Borhorst farm, Section 25, Cynthian Township, was a dry hole, while the Eilerman Oil Co.'s second test on the F. J. Borcher farm, Section 26, same township, is a 1-bbl. pumper.

In Wyandot County, R. W. Kirk and others brought in a well on the S. O. Smith farm, Section 11, Ridge Township, that showed 150,000 feet of gas from the Trenton formation. McPheron and others are drilling on the Howard Walton farm, Section 10, Crane Township, same county.

Eleven old producing wells were abandoned by the Ohio Oil Co. in Wood County. In Ross Township, No. 1 on the S. Radcliff, Section 26, was pulled out; as well as No. 17 on the Northwestern Ohio Natural Gas Co.'s farm, just south of Cygnet, in Section 17, Bloom Township. In Liberty Township, same county, the Ohio Oil Co. pulled out Nos. 28 and 40 E. B. Phillips farm, Section 33; Nos. 1, 4, 6 and 9 D. Deshetler farm, Section 26; Nos. 9 and 12, Charles Mercer farm, same section, and No. 1 on the Julia Sterling farm, Section 33.

In Hancock County the Ohio Oil Co. abandoned Nos. 6, 7, 8, 9 and 12 Joseph Crites farm, Section 35, Allen Township, and in Scott Township, Sandusky County, Onsel Brothers abandoned their Nos. 1, 2, 3 and 4 Michael Putnam farm, Section 29.

CENTRAL OHIO

Eight completions were reported in the Central Ohio Field, of which one was a dry hole and seven were gas wells. In Lorain County the Ohio Fuel Gas Co. drilled in a light gas well in No. 2-5,633 on the Frank Stepka farm, Lot 72, Grafton Township. Ramage and Willis are drilling their No. 3 on the Frederick Armbruster farm, Lot 89, same township.

In Richland County, the Commonwealth Gas Corp.'s No. 1 on the Angeline Cates farm, Section 11, Jefferson Township, showed some gas in the Clinton from 2,449-51 feet, but has been termed a dry hole, there not being enough gas to warrant its connection to pipe line.

In Knox County, H. E. Perkins has a rig on the H. L. Simpson farm, Lot 28, Howard Township.

In Coshocton County, the Gas Light & Coke Co. made a location for No. 3 on the Nicholas Lower farm, Section 10, Mill Creek Twnship. In Licking County, McClay Brothers are drilling No. 8 Jacob Lothers farm, Section 7, Perry Township.

In Muskingum County, Brush Creek Township, the Ohio Fuel Gas Co. has a gas well in No. 2-5,637 Carrie Staker farm, Sections 3 and 10. Pure Oil Co.'s No. 2 on the Scott-Hammond farm, Section 3, same township, struck top of Clinton lime at 4,170 feet but failed to find gas at 31 feet in at a total depth of 4,201 feet.

In Athens County, Ohio Fuel Gas Co.'s No. 2-5,630 Gertrude Shurick farm, Fractional Section 3, Berne Township, is reported dry.

In Stark County, Jackson Township, the Ohio Fuel Gas Co. has a gas well in No. 1-5,602 Elizabeth Harmount farm, Section 21. F. A. Brendall and others brought in a nice gas well on the J. W Hines farm, Section 9, same township, and a lighter gas producer in No. 1 Emma P. Smith farm, Section 11, same township, while the same firm hit a good gas well on the H. and A. Huthmacher farm, same section, in the Clinton lime at a total depth of 4,420 feet. White & Bacon have a rig up for a second test on the Bessie Slagle farm, Section 14, and the East Ohio Gas Co. has a rig up for No. 3 John Strouble farm, same township.

In Fairfield County, Richland Township, Samuel Weirick and others have a light gas well on the William M. Kerr farm, Section 29, in the Berea sand from 732 to 734 feet.

In Guernsey County, Wheeling Township, the East Ohio Gas Co. has a rig up for a second test on the Clarence Quillan farm, Section 10.

In Medina County, Chatham Township, E. R. Edson Sons Co.'s No. 34 George W. Packard farm, Section 4, is reported good for 5 bbls.

INDIANA

An exceptionally good oil well is reported from the Indiana Field, which may bring about more development in its area. The new well is the Gib Van Oil Co.'s No. 4 in the southwest corner of the Agnes Haskins farm, SE Section 18, Washington Township, Gibson County, which had an initial of 190 bbls. at from 1,277-86 feet. This lease and the Lottie Hope lease, both in the same township, have proved the best found in Indiana for a number of years. This new well is slightly in advance of the old developments in that county.

In Pike County, Madison Township, the Ohio Oil Co. abandnoed its old No. 10 well on the Sarah J. Thomas farm, NE Section 30.

R. J. Rendall and others drilled in a

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Few Completions in Eastern Fields

Washington County Well Still Makes Intermittent Flows in Possible New Pool. Important Transfer of Leases Reported

By Staff Correspondent

PITTSBURGH, Pa., Apr. 4.—The South Penn Oil Co. advised operators whose oil is run into the lines of the Buckeye Pipe Line Co. in Ohio, the Eureka Pipe Line Co. in West Virginia, and the Southwest Pennsylvania Pipe Lines in Southwest Pennsylvania, and with whom contracts exist for all oil as run, that for the month of April allowable production will be 90 per cent of the amount customarily received, viz. November, 1931, figures. This is an increase in production over the past two months as during those two months production was curtailed 25 per cent.

In part, the notice states that the continued curtailment is necessary due to the similar curtailment on the part of refiners of Pennsylvania Grade crude and then states: "We want to express our appreciation of the very complete cooperation we have received from all our patrons during the month of March and to express the hope that the maintenance of a balance between production and consumption will rapidly bring about a more satisfactory condition. It is a little early to predict what the April condition will be, but from the present statistics of our industry it would appear that there should be a slight improvement by that time."

In the upper county, the Bradford and Allegany districts, no official notice has been made, but it is understood that the present curtailment of 30 per cent will be reduced to 15 per cent. Throughout the National Transit Co. districts production allowable is set in zones according to refiners' requirements at the different destinations, and is not general over the entire field.

Few wells were completed in the three districts of the eastern fields during the past week, the total being limited to two gas wells, one fair oil producer, and four dry holes.

SOUTHEAST OHIO

Interest in the possibility of a new pool in southeastern Washington County, in Ohio, continues as the test of William Harris and others on the Joseph Crago farm in Grandview Township still makes intermittent flows of about 100 bbls. every other day. Efforts at casing off the open Injun, Squaw and Berea sands from the hole has been held up by weather and material, but work has been started.

What is expected to prove an important transfer of leases in this district was closed when J. T. Campbell and others transferred their holdings in the Fred Devore farm, the E. E. Knowlton (of Wade) farm, and that owned by the Crothers family of Independence Township. These leases were transferred to Benedum and Trees of Pittsburgh, Pa., and I. C. Grimm of Woodsfield, Ohio. The property involved covers 195 acres on which there are 12 small Injun sand producers and it is reported that several of these wells will be drilled to the third Warren sand. It is reported the consideration was $25,000. Associated with Mr. Campbell in the transfer were Junius Greenwood and Mrs. Frank Green of Newport, and Mrs. Thomas B. Green of Lima.

Completions

But one producer was completed in Southeast Ohio and it was a fair oil well. In NE Section 8, Fallsbury Township, Licking County, the Emerald Petroleum Co. completed a test on the S. A. Tarlton farm in the Clinton sand at a depth of 2,875 feet. After shot it produced 60 bbls. the first day and is rated as a 10-bbl. pumper.

Two other tests in Southeast Ohio were disappointing. In the SE Section 3, Brush Creek Township, Muskingum County, the Ohio Fuel Gas Co. drilled a test on the Staker heirs farm through the Clinton sand to a depth of 4,001 feet. It proved to be a dry hole. In the same county and township, but in NW Section 10, the Fritz Oil & Gas Co. drilled a test on the Gertrude Spring farm through the Clinton and Medina sand to a depth of 4,250 feet. The Medina sand proved dry and from the Clinton sand there was a showing of about 40,000 feet of gas a day, which was not sufficient for completing, and the test was listed as a dry hole.

Drilling in Ohio

In Coshocton County, the Ohio Gas Light & Coke Co. is drilling on the Nicholas Lower farm, Section 10, Millcreek Township. It is reported 500 feet deep. In Morgan County, W. S. Harris is drilling No. 3 on the F. A. Gifford farm, Section 13, Marion Township. In Noble County, Harper Brothers' test on the D. Moreland farm, Section 31, Enoch Township, is standing at 700 feet. In Fearing Township, Washington County, T. N. Curtis is drilling No. 11 on the Robert Biehl farm, Lot 125, which has reached 600 feet.

In Guernsey County the Ohio Producing & Refining Co. is building a rig on the E. C. Quillan farm, Section 10, Wheeling Township. In Jefferson County J. D. Jackson & Co. are drilling on the John Williamson farm, Section 17, in Island Creek Township, which has passed the 800-foot level. In Licking County J. W. Rutledge and others are building a rig for No. 4 on the William D. Booth farm, Section 14, Fallsbury Township.

WEST VIRGINIA

In West Virginia two gas wells were completed and one dry hole reported. One of the gas wells was fair. In Scott district, Putnam County, W. H. Kirtley completed a test on the J. H. Cottle farm at a depth of 1,090 feet in the Maxon sand. It is reported showing for slightly in excess of 1,000,000 feet a day.

In Union district, Wayne County, A. F. Black, trustee, completed a test on the Guyan Valley Bank property. It was drilled in the Brown shale at a depth of 3,650 feet and will make a fair gas well from that formation. In Roane County, W. B. Heeter drilled a test on the T. C. Burdette farm in Curtis district which proved dry in the Salt sand at a depth of 1,705 feet. The well may be drilled to deeper sands.

Drilling in West Virginia

In Ritchie County, Bradley, Ridgway, Kirk and others are drilling on the W. H. Ridgway farm in Clay district. In Murphy district, Allen and Bickerstaff have reached 1,500 feet on the H. Allen farm. In the same district H. H. Allen is down 1,792 feet on the J. P. Allen farm. W. R. Hays and others are fishing at 1,000 feet on the Wilson Brothers lease, Murphy district. In Grant district, R. C. Jackson remains shut down at 1,450 feet on the Rutherford heirs farm.

In Wood County Warren Reed has

(Continued on Page 53)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 36)

Eckert et al's No. 1 Edwards, 150 ft. to N and W lines of farm in Martinez Sur. ....T.D. 1,490 ft.; standing.
Dr. Ewell Neil's No. 1 J. Watson, 500 ft. from W line, 1,700 ft. from S line of B. Martinez Sur. ....T.D. 2,495 ft.; in Edwards, dry.
Jones & Voltz' No. 6 Bonkowsky ....T.D. 650 ft.; abnd.
Schneider, Rees et al's No. 2 Claussen, 12 miles NE of San Antonio ....T.D. 1,330 ft.; S.D.
S. W. Blount's No. 1 S. A. Land Co., I. Perez Sur., 1,000 ft. to N line, 450 ft. to W line of tract ....T.D. 520 ft.; S.D.

BROOKS COUNTY

Allen & Morris' No. 1 Lasater, NW part of county ....Making location.
Ed East's No. 1 A. Garcia, 600 ft. from N and E lines of 2,168-ac. tract in SW part of county ....T.D. 85 ft.; set surface csg.

CALDWELL COUNTY

Cole & Moseley's No. 1 Pierce, 150 ft. to NW and SW lines of tract, Solomon Seal Sur. ....T.D. 2,114 ft.; show oil.
Kistler, Stivers & Hendrick's No. 1 D. Carter, 400 ft. from NW line of Sur., 300 ft. NE or Creek in I. Allen Sur. ....T.D. 1,485 ft; standing in chalk.
Meyer's No. 1 G. C. and W. Walker, Solomon Seal Sur....T.D. 160 ft.; standing.
C. J. Webster Oil & Gas Co.'s No. 1 McCrory in John Neil Sur. ....T.D. 1,980 ft.; drlg.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Stewart Nelson in I.&G.N. Sur. No. 43 ....Rigging up.

DEWITT COUNTY

Pat Armstrong's No. 1 E. T. Clark, 2,000 ft. S of Simms-Republic's No. 1 Clark in Jose Santos Sur.....Moving in.

DUVAL COUNTY

John F. Camp's No. 1 Well, 990 ft. NW and 150 ft. NE of cen. of Sur. No. 570 ....T.D. 200 ft.; set surface csg.
Frank Gravis et al's No. 2 Schallert, 425 ft. to E line, 150 ft. to S line of Blk. 10, Cain & Smith Subd. "A", Sur. No. 255 ....T.D. 1,610 ft.; standing.
Hynes and Nessly's No. 1 Duval Ranch Co., 200 ft. from S and E lines of Blk. 26, Sur. No. 196 ....Location.
O. W. Killam's No. 1 Peters, 150 ft. from E line, 450 ft. from N line of SE of Sur. No. 1 ....T.D. 2,725 ft.; standing.
Seacord and Putnam's No. 1 J. W. Johnson, 150 ft. to S and W lines of NW NW, Sur. 44 ....T.D. 425 ft.; drlg.
Smith & Capps' No. 1 Duval ranch lands, 1,520 ft. from NE line, 2,490 ft. from SE line of Sur. 576 ....T.D. 1,200 ft.; drlg.
Suttle et al's No. 1 Bennett, 150 ft. from N and E lines of Sur. No. 44 ....Spudded in.
R. A. Thompson's No. 1 Parr, 2,640 ft. to W line, 12,160 ft. to S line of San Andres grant ....T.D. 4,011 ft.; drlg.
Trinity Drillers, Inc.'s No. 1 Hagist, 3,892 ft. from W line, 4,400 ft. from S line of Sur. 122 ....Location.

FAYETTE COUNTY

A. D. Becker's No. 1 fee, 972 ft. from N line, 700 ft. from W line of tract in Williamson Sur. ....Location.

GUADALUPE COUNTY

Barnhill et al's No. 1 H. L. Hoffman, 450 ft. to N and W lines of farm, in John G. King Sur. ....T.D. 850 ft.; abnd.
Luling Oil & Gas Co.'s No. 1 J. D. Brown, 150 ft. from N line, 450 ft. from E line of tract in C. Wall Sur....T.D. 2,500 ft.; drlg.
Sal-Mar Oil Corp.'s No. 1 F. A. Pfullman, 150 ft. from W line, 1,050 ft. from N line of tract in Lewis Bollinger Sur. ....Moving in rig.
Tidal Oil Co.'s No. 1 Black, 1,231 ft. from NW line, 150 ft. from NE line of Valentine Bennett Sur. ....T.D. 2,806 ft.; abnd.

GOLIAD COUNTY

Hoffman & Gooch's No. 1 Fromme, 600 ft. from N and 1,200 ft. from W line of Peter B. Dexter Sur. ....T.D. 2,279 ft.; cleaned out; on bottom; drlg.
Plymouth Oil Co.'s No. 2 Parks, 400 ft. S of No. 1 Parks in Solomon Parks Sur. ....Bldg. derrick.
Neal et al's No. 1 J. M. Pettus, 10,700 ft. to S line, 2,500 ft. to E line of Pedro Trevino Sur. ....T.D. 4,565 ft.; standing.

GONZALES COUNTY

Crowder Oil Co.'s No. 1 Preston, 1,000 ft. from W line, 2,000 ft. from N line of W. W. Pace Sur. ....T.D. 200 ft.; standing.
Edmiston & Kirby Petroleum Coo's No. 1 J. W. Ward, Jr., 200 ft. from N and W lines of tract in Dan McKay Sur. ....Derrick up; moving in tools.
Johnson & Mattock's No. 1 J. James, 12 miles NE of Gonzales city, 900 varas from E line, 300 ft. from S line of tract in M. A. Williams Sur. ....T.D. 545 ft.; standing.
Nassamer, Gordon & Waldrop's No. 1 B. Botts, 2,500 ft. from E line, 650 ft. from S line in Sec. 6, Blk. 56, Gonzales Sur. ....T.D. 950 ft.; standing.

HIDALGO COUNTY

Barrett-Kanellos' No. 1 J. B. Brock, 7 miles W and N from Mission (on Monte Cristo road) ....T.D. 4,010 ft.; S.D.
LaJoya Oil & Gas Co.'s No. 1 W. L. Hart, 6 miles W from Mission, north of San Fordyce ....T.D. 4,500 ft.; standing.
Dayle L. Smith's No. 1, 18 miles W from Edinburg ....T.D. 4,026 ft.; standing, showing gas.
San Roman Oil Co.'s No. 1 J. T. Lomax, 7,500 ft. from S and E lines of San Roman Sur. ....T.D. 2,500 ft.; S.D.
Dayle L. Smith's No. 3 Daskam, SW part of county....T.D. 1,370 ft.; drlg.

JIM HOGG COUNTY

L. W. Connor's No. 1 Holbien, 150 ft. from N and E lines of Blk. 7, Sur. 7, Holbien Subd. of Las Animas grant ....T.D. 2,000 ft.; drlg.
T. P. Morgan's No. 1 fee, 2,223 ft. to N line, 1,640 ft. to E line of Share 19, Palo Blanco grant ....T.D. 4,100 ft.; drlg.

JIM WELLS COUNTY

F. A. Lain's No. 1 Vernon Porter, 800 ft. from S line, 400 ft. from W line of 200-ac. tract in Sur. 25..Location.
Vacuum Oil Co.'s No. 1 Seeligson, 4,500 ft. to W line, 75,000 ft. to S line of Los Jaboncillos Sur. ....T.D. 4,933 ft.; testing sand.

KARNES COUNTY

A. E. Edmiston's No. 1 O. L. Cochran, 150 ft. from S line, 500 ft. from E line of farm in D. B. McConnell Sur. ....T.D. 1,820 ft.; standing.
Pickett et al's No. 1 D. E. Lyons in Victor Blanco Sur....Rigging up.

KENDALL COUNTY

Dixon Oil Co.'s No. 1 Ottmar Behr, 823 ft. from S and N lines of Jessie Wilson Sur., 3 miles S of Sisterdale ....T.D. 2,708 ft.; standing.
Fred S. Dibble's No. 1 Ellebrach, Sur. 77, N part of county ....T.D. 50 ft.; S.D.

KERR COUNTY

George Ball's No. 1 F. A. Karger, 3 miles north of Kerrville ....Rig on ground.
Evans & Gant's No. 1 E. Young, A. E. Burge Sur. No. 28..T.D. 1,312 ft.; standing.
Evans & Gant's No. 2 Love, 150 ft. S and W line of Sur. 1,593 ....T.D. 5,885 ft.; abnd.
Verde Oil & Gas Co.'s No. 1 J. D. Witt, 1,320 ft. from N line, 1,220 ft. from W line of Sec. 1,923, Hamilton Sur., 4 miles S from Center Point. T.D. 200 ft. Carried to this depth and abandoned as Herber Oil Co.'s No. 1 J. D. Witt ....T.D. 270 ft.; drlg.

KLEBERG COUNTY

H. Carter et al's No. 1 R. H. Simmons, in Sec. 7, King Sur. No. 3 ....T.D. 3,154 ft.; drlg.

LIVE OAK COUNTY

Catlett & O'Neill's No. 1 H. D. Miller, 2,400 ft. from SW line, 6,125 ft. from NW line of Miller ranch in SE part of county ....Location.
J. A. Harper's No. 1 fee, 2,130 ft. to N line, 510 ft. to E line of farm, J. Pointevant Sur. No. 37 ....Spudded in and standing.
Henderson Coquat's No. 1 Hewitt, 250 ft. from N and E lines of SW of Sec. 5, Thomas Adams Sur. ....T.D. 1,785 ft.; S.D.
Henderson Coquat's No. 2 Sanger, 1,280 ft. NW of No. 1 Sanger ....T.D. 3,300 ft.; making repairs.

LEE COUNTY

Washington-Lee Oil Co.'s No. 1 L. Hicket, 1,100 ft. from N line, 200 ft. from E line of tract in J. D. Varrelman Sur. ....Location.

McMULLEN COUNTY

Jacob Buzzini & Pickett's No. 2 Jacob, 150 ft. NW of No. 1 Jacob ....T.D. 962 ft.; setting csg.

MEDINA COUNTY

Frank A. Brown's No. 1 Fohn, 150 ft. from E line, 790 ft. from N line of J. F. Torry Sur. No. 113 ....T.D. 922 ft.; twisted off drill stem, fishing.

MILAM COUNTY

Birdwell et al's No. 1 E. and J. S. Williams, 150 ft. from N and E lines of 46-ac. tr. in Samuel P. Carson Sur., 5 miles SW of Rockdale ....Spudded in.
H. W. Elliott's No. 1 Marek, 767 ft. from N line, 500 ft. from W line of 160-ac. tract in B. Wickson Sur. ....T.D. 3,000 ft.; S.D.
Frank A. Yeager's No. 1 Hose, 750 ft. from E line, 150 ft. from S line of lease in E. Allen Sur. ....T.D. 1,675 ft.; going on pump.

NUECES COUNTY

Camp and Stanolind Oil & Gas Co.'s No. 1 King, 600 ft. to N and W lines of Sec. 23, Richard King farm lots subd. ....T.D. 3,705 ft.; drlg.
C. E. McCarthy's No. 1, W. of Corpus Christi ....Making location.

REAL COUNTY

McGinley Corp.'s No. 1 Haby, C of SW, Sec. 175 ....T.D. 2,530 ft.; standing.

SAN PATRICIO COUNTY

John F. Camp's No. 1 Jackson, SW cor. of SW Sec. 30, 3 miles N from Edroy ....T.D. 4,311 ft.; drlg.

STARR COUNTY

Davenport et al's No. 1 Wells, 30 miles W of Mission....T.D. 1,093 ft.; casing stuck.
R. E. Johnson's No. 1 Goodrich, 1,214 ft. from N line, 1,065 ft. from W line of tract, 1½ miles N of Rio Grande City ....T.D. 1,382 ft.; comp.; flowing 200 bbls. dly.
Stryalls Oil Corp.'s No. 1 M. E. Salinas, 155 ft. from N and W lines of lease in Porcion 80, Share 38 ....T.D. 1,540 ft.; drlg.
Strayhorn Oil Co.'s No. 1 Caffarelli, Porcion 80 ....Location.
R. B. Suttle's No. 1 Guerra, 2,000 ft. to N line, 270 ft. to W line of Porcion 110 ....T.D. 810 ft.; no report.
Jack Tarver's No. 1 Guerra, NE of Rio Grande City ....T.D. 735 ft.; drlg.
Jess Williams' No. 1 Welsh, 1,120 ft. to W line, 1,500 ft. to N line of tract in Pedernal grant ....T.D. 667 ft.; drlg.

TRAVIS COUNTY

C. R. Franklin et al's No. 1 J. Wilson, 160 ft. from N and W lines of farm in A. Alexander Sur. ....T.D. 1,210 ft.; S.D.
Ray & Henze's No. 1 Hatech, in C of tract in S. Hamilton Sur. ....T.D. 900 ft.; S.D.
Ray & Orth's No. 1 Lundgren, 550 ft. from N line, 150 ft. from W line of 133-ac. tract in L. Kimbro Sur....Location.

WEBB COUNTY

O. W. Killam's No. 4 Bruni, 5,050 ft. to NE line, 7,675 ft. to SE line of El Ranchito tract, J. V. Borrego grant ....T.D. 1,985 ft.; abnd.
O. W. Killam's No. 5 Bruni in J. V. Borrego grant ....Derrick.
Norden & Morris' No. 1 Gates, 160 ft. from E line, 50 ft. from S line of Blk. 5, Sur. 19 ....T.D. 1,083 ft.; testing sand.
Power & Dettenhalm's No. 1 Cowan & Goss, 1,870 ft. from W line, 1,656 ft. from N line of Sur. No. 1,606..T.D. 405 ft.; standing.
Fansler, Johnson & Peacock's No. 1 Laurel, 425 ft. to N line, 600 ft. to E line of Blk. 10, Sur. 271 ....T.D. 2,500 ft.; abnd.
Phillips Rosenberg's No. 2 Laurel, 150 ft. from N and W lines of Blk. 8, Sur. No. 271 ....Derrick.
W. R. Shankle's No. 1 Ellison Furniture & Carpet Co., 150 ft. from SW and NW lines of Blk. 2, Sur. 466...T.D. 2,205 ft.; abnd.

WILLIAMSON COUNTY

McLean et al's No. 2 R. C. Miller, 800 ft. to S line, 100 ft. to W line of tract in B. Manlove Sur. ....Rigging up.
McNeil et al's No. 1 W. R. Lane, 450 ft. from NW line, 150 ft. from SW line of 108.4-ac. tract. in T. E. Shell Sur. ....Set one joint surface pipe.
G. B. Peterman's No. 1 Galler, 1,800 ft. from S line, 150 ft. from W line of 140-ac. tract in H.Y.&B.R.R. Sur. ....T.D. 1,493 ft.; set csg.

ZAPATA COUNTY

Ballard & Mercer's No. 1 Flores, 500 ft. from NE line, 580 ft. from SE line of Blk. 27, Porcion 37 ....T.D. 2,497 ft.; showing gas.
George Ball's No. 1 Gutierrez in Charco Redondo grant, taken over from Moore et al to deepen ....T.D. 2,065 ft.; drlg.
Joe Cullinan's No. 1 E. Gutierrez, 1,992 ft. from NE line, 2,033 ft. from SE line of Charco de la India grant ....Location.

ZAVALLA COUNTY

Carpenter & Jenkins et al's No. 1 John Wolf, Sec. 8, Abstract 1,199 ....T.D. 757 ft.; resumed drlg.

SOUTHWEST TEXAS PROVEN AREAS

(Continued from Page 36)

Gatlin Oil Co.'s No. 11 I. A. Beck, 700 ft. from SE line, 156 ft. from SW line of tract in J. Montes Sur. ....T.D. 495 ft.; drlg.
L. W. Stieren's No. 1 Annia Terrell, 150 ft. from N and E lines of lease in J. Martinez Sur. ....Location.
W. R. Swearingen's No. 8 Halbadier in Perez Sur. ....675 ft.; set csg., waiting on cement.
W. K. Oil & Gas Co.'s No. 3 Strunk, 300 ft. E of No. 2....Location.
W. K. Oil Co.'s No. 1 Strunk, 150 ft. S of N line, 150 ft. W of E line, John Grant Sur. ....T.D. 150 ft.; drlg.
W. K. Oil Co.'s No. 2 Strunk, 150 ft. from S line, 1,051 ft. W of E line, Juan Mantes Sur. ....Drlg.

SALT FLATS POOL—CALDWELL COUNTY

Joe Bruner's No. 1 Malone, 150 ft. to N line, 750 ft. to W line of tract, A. Floyd Sur. ....T.D. 2,788 ft., in Edwards, dry.
John Storey's No. 1 Dickerson, 150 ft. to N of center of S line of tract, John R. Rains Sur. ....Rigging up.

COLE POOL—DUVAL COUNTY

Cole Petroleum Co.'s No. 75 Benavides, 365 ft. from NE line, 150 ft. from NW line, Blk. 8, Sec. 13, Mariana Arispe grant ....T.D. 3,800 ft.; drlg.

GOVERNMENT WELLS—DUVAL COUNTY

Humble Oil & Ref. Co.'s No. 3 Paul White, 1,650 ft. from S and W lines of Sur. ....T.D. 2,306 ft.; drlg. plug.

SLICK POOL—GOLIAD COUNTY

T. B. Slick estate's No. 2 Allen, 1,660 ft. from NE line, 330 ft. from NW line of tract in Obid Marshall Sur. ....Building derrick.

DARST CREEK POOL—GUADALUPE COUNTY

Humble Oil & Ref. Co.'s No. 4-C Denman, 650 ft. from E line, 600 ft. NE of No. 3-C Denman ....T.D. 2,542 ft.; setting pipe.

CHITTIM POOL—MAVERICK COUNTY

Texas Gas Utilities' No. 8 Chittim, 24 ft. S of No. 7 Chittim ....T.D. 5,100 ft.; standing.

SAXET FIELD—NUECES COUNTY

Gulf Coast Oil Co.'s No. 1 Perkins and LeGasse, 330 ft. from N and E lines of 245-ac. tract, Sec. 26, Shepard Subd. ....T.D. 2,435 ft.; drlg.
Houston Oil Co.'s No. 1 McGregor, 150 ft. from E line, 330 ft. from S line of 100-ac. tract in Sur. 311 ....T.D. 4,265 ft.; est. 200 bbls.
Kepley et al's No. 1 Speer and Hocker, 200 ft. from E and S lines of 850-ac. tract. in Speer and Driscoll lands ....Spudded in.

Rutherford Drilling Co.'s No. 1 Hunter, 150 ft. from S and W lines of 10-ac. tract ..... Rigging up.
Saxet Oil Co.'s No. 5 Well, 3,041 ft. to N line, 333 ft. to W line ..... T.D. 2,500 ft.; standing.
Saxet Oil Co.'s No. 6 Dunn, 600 ft. S of No. 5 Dunn, 4 miles W from Corpus Christi ..... T.D. 6,679 ft.; drlg.

ARANSAS POOL—SAN PATRICIO COUNTY

Atlantic Oil Prod. Co., to deepen to 6,000 ft. the Welder Oil Corp.'s No. 3 Welder ..... T.D. 3,689 ft.; to deepen.

WHITE POINT—SAN PATRICIO

United Production Co.'s No. 3 Cage ..... T.D. 4,125 ft.; reinstated to deepen.

LOS OLMOS POOL—STARR COUNTY

Bennett Oil & Gas Co.'s No. 1 Seabury et al, Porcion 75.. Moving in.
Coastal Oil & Gas Co.'s No. 1 Kelsey-Bass, 448 ft. to N line, 150 ft. to W line of Tract 52, Sur. 2, Porcion 86.. Location.
Davis et al's No. 3 Kelsey Bass, 150 ft. from N and W lines of W 10-ac. of SE NW of Sur. 6, Subd. of Porcions 75, 76 and 77 ..... T.D. 493 ft.; bailing.
Felder, Mitchell & Barnsley's No. 1 Kelsey Bass in Sur. 8, Subd. of Porcions 75, 76 and 77 ..... T.D. 320 ft.; drlg.
Hooks and Weaver's No. 5 Kelsey-Bass, 525 ft. to S line, 150 ft. to W line of lease ..... T.D. 312 ft.; drlg.
M. A. Landrum's No. 2 Kelsey Bass, 519 ft. from S line, 150 ft. from E line of Sur. 6, Porcions 75, 76 and 77.. Location.
Los Olmos Oil & Gas Co.'s No. 11 Kelsey-Bass ..... T.D. 260 ft.; standing.
M. A. Landrum's No. 1 A. K. Bass, Sec. 6, 150 ft. to S and E lines of lease ..... Location.
R. H. Pursley's No. 1 Seabury, 150 ft. from E line, 4,125 ft. from S line of Share 5, of W two-thirds of Porcion 75 ..... T.D. 439 ft.; abnd. dry.
Quien Sabe Oil & Gas Co.'s No. 3 Kusch, Share 11, W two-thirds of Porcion 75 ..... T.D. 410 ft.; drlg.
Rio Oil & Gas Co.'s No. 1 Kelsey-Bass (formerly carried as Los Olmos Oil & Ref. Co.'s No. 1 Kelsey-Bass) ..... T.D. 910 ft.; standing.
Rio Oil & Gas Co.'s No. 3 Kelsey-Bass, No. 6 Subd., Porcions 75, 76, 77 ..... T.D. 425 ft.; standing.
San Marcos Oil & Gas Co.'s No. 7 Ivey, 450 ft. S of No. 6 Ivey ..... T.D. 480 ft.; comp. 10 bbls.
San Marcos Oil & Gas Co.'s No. 8 Ivey, 1,355 ft. from N line, 155 ft. from E line of Share 8, W two-thirds of Porcion 75 ..... T.D. 210 ft.; comp. 10 bbls.
San Marcos Oil & Gas Co.'s No. 9 Ivey in W two-thirds of Porcion 75 ..... T.D. 204 ft.; comp. 10 bbls.

WEST COLE POOL—WEBB COUNTY

French Oil Corp.'s No. 7 Benavides, 2,310 ft. from N line, 150 ft. from W line of Sur. 659 ..... Rigging up.

ESCOBAS POOL—ZAPATA COUNTY

E. R. Black & Paul S. Williams' No. 1 Comitas grant, 150 ft. from NW and NE lines of Blk. 100 ..... Derrick.
F. M. Blair & Son's No. 1 Montemayor, 450 ft. to N, 150 ft. to E line of Blk. No. 1, Sur. No. 63 ..... T.D. 1,200 ft.; drlg.
Daniels & Hill's No. 2 Montemayor, 112 ft. from N line, 774 ft. from E line of Blk. 7, Sur. 64 ..... T.D. 1,484 ft.; plugging back.
O. W. Killam's No. 5 Medina, 325 ft. from SE line, 450 ft. from NE line of Share 34 of Comitas grant ..... T.D. 1,466 ft.; set csg.
W. M. Lee's No. 1 I. G. Trevino, 150 ft. from S and W lines of Blk. 7, Sur. No. 66 ..... T.D. 1,293 ft.; drlg.
D. M. Shaffer's No. 1 M. Garza, 150 ft. from NE and NW lines of Blk. 56, C. A. Douglas Subd. of Zerro ranch ..... T.D. 1,400 ft.; drlg.
Trevino Oil Corp.'s No. 16-A Trevino, 150 ft. from S and E lines of Blk. 14, Sur. 412 ..... Location.

CHARCO-REDONDO POOL—ZAPATA COUNTY

Bob & Richey's No. 29 Martinez, 810 ft. from SW line, 360 ft. from SE line of Blk. 24, W. R. Duke Subd., Charco Redondo grant ..... Location.

GULF COAST FIELDS AND WILDCATS

(Continued from Page 41)

HUMBLE—HARRIS COUNTY

J. E. Burt et al's No. 2 C.O.&G.-The Texas Co. fee, J. B. Stevenson Sur., 450 ft. N of No. 1 ..... Location.
Rio Bravo Oil Co.'s No. 7 fee (W.O.), W. B. Adams Sur., 216 ft. from W line and 50 ft. from S line of 22-acre tract, Bender South Addition ..... Rig up to work over 4,126 ft.
Sun Oil Co.'s No. 27 Bender, W. B. Adams Sur., 250 ft. W of No. 26 in line with No. 25 ..... Drlg. shale 4,640 ft.

PIERCE JUNCTION—HARRIS COUNTY

Anderson & Plummer's No. 4 Whitehead (W.O.) ..... Drlg. shale 4,550 ft.
Navarro Oil Co.'s No. 3-A Cain (W.O.), Jas. Hamilton Sur. No. 98; 75 ft. from S line and 50 ft. from W line of "A" lease ..... Sidetracked 3,124 ft.; drlg. shale and lime 3,250 ft.
Pure Oil Co.-Moody Receiver's No. 3 Herman, Jas. Kopman Sur., 200 ft. due W of C of E line of 25-acre tract ..... Drlg. lime 2,886 ft.
Rio Bravo Oil Co.'s No. 24-A Settegast, J. Kopman Sur. No. 44, 1,900 ft. S and 200 ft. W of NE cor. of "A" lease ..... Drlg. gumbo 1,445 ft.
Rio Bravo Oil Co.'s No. 8-B Settegast (D.D.), J. Kopman Sur. No. 44, 300 ft. from N line and 50 ft. from E line of "B" lease ..... Drlg. sand and shale 3,224 ft.

MYKAWA—HARRIS COUNTY

F. R. Flannigan et al's No. 3 Minnetex (W.O.), 125 ft. from W line and 100 ft. from S line of Blk. 252, Wm. Lovett Sur. ..... Cleaning hole to work over 4,873 ft.

ESPERSON—LIBERTY COUNTY

Cranfill-Reynolds Co.'s No. 20 Esperson, C. W. Fisher Sur., 471 ft. from W line and 510 ft. N of No. 5 Esperson ..... Sandy shale 2,226 ft.
Cranfill-Reynolds Co.'s No. 9 Moore's Bluff, M. Duncan Sur., 500 ft. S of N line of Moore's Bluff tract in line with No. 6 Davis and No. 6 Moore's Bluff ..... Location.

HANKAMER—LIBERTY COUNTY

Gulf Prod. Co.'s No. 15 Boyt, H.&T.C. Sur. No. 22, 500 ft. E and 500 ft. S of No. 12 ..... Drlg. sticky shale 1,725 ft.

HULL—LIBERTY COUNTY

D. & L. Prod. Co. and Bashara Oil Co.'s No. 1 Pevito, Jesse Devore Sur., 34½ ft. from E line and 30 ft. from N line of 5-acre strip ..... Derrick.
Eclipse Oil Co.'s No. 1 Barrow, Jesse DeVore Sur., 50 ft. from N line and 31 ft. from E and W lines 37-acre tract ..... Set screen 4,556 ft.; comp. flowing 350 bbls.
Republic Prod. Co.'s No. 63-A Dolbear, Jesse Devore Sur., 50 ft. NW. of No. 63 in line with No. 61 ..... Spudded.

MARKHAM—MATAGORDA COUNTY

Claude Hamill et al's No. 1 Northern Irrigation Co., 50 ft. out of SW cor. of N 80 acres (half) of NW ¼ Sec. 5, Blk. 9, I.&G.N. Sur. ..... Sand showing oil 2,497-3,508 ft.; cmtd. 6-in. csg. 2,490 ft.
L. P. Smith et al's No. 2 Hudson, 850 ft. from E line and 1,050 ft. from S line Blk. 15, Henry Parker Sur. ..... Set 12 ft. of 4½-in. screen 3,261 ft.; comp. flowing 800 bbls. PL oil, 525 lbs., pressure, ⅝-in. choke, gravity 23.8° (cor.).
United North & South Oil Co.'s No. 1 McDonald, I.&G.N. Sur., Blk. 9, Sec. 5, 460 ft. S and 30 ft. E of NW cor. 35-acre tract ..... T.D. 3,698 ft.; plugged to sand at 3,577-81 ft.

PORT NECHES—ORANGE COUNTY

The Texas Company's No. 1 Polk-Kuhn-Glass, 260 ft. E and 1,545 ft. S of SW cor. Marshall Beaucham Sur., in the T. J. Notgrass Sur. ..... Drlg. sticky shale 6,406 ft.
The Texas Company's No. 3 Polk, T. J. Notgrass Sur., 500 ft. NE of No. 2 Polk ..... Sand and shale showing oil 3,128-40 ft.; cmtd 7-in. csg. 3,120 ft.
The Texas Company's No. 3 Kuhn, 587 ft. S and 150 ft. W of NE cor. of the Mary E. Hall Sur. No. 2 ... Cored sand and shale showing oil 3,697-3,713 ft.

ORANGE—ORANGE COUNTY

Sun Oil Co.'s No. 1 Belile (D.D.) ..... Cleaning hole to deepen 3,655 ft.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 1 Tom Heard (W.O.), Blk. 16, Townsite ..... T.D. 6,462 ft.; plugged to 6,422 ft.; set 20 ft. screen; L.P. 30 bbls. "gasoline," 1,450 lbs. W.P., ¼-in. choke.
E. M. Jones' No. 1-B Mitchell (D.D.), 250 ft. NW of SE line and 250 ft. SW of Mission River ..... Drlg. shale 7,750 ft.
Larco Gas Co.'s No. 4 Strauch heirs, 150 ft. from N line and 150 ft. from W line, Lot 6, Blk. 2 ..... Rigging up to resume drilling at 3,696 ft.
Moody-Seagraves Prod. Co.'s No. 2 O'Connor (W.O.),150 ft. from N line and 508 ft. from W line 62-acre tract ..... T.D. 6,454 ft.; to plug back.
Pearson Properties' No. 2 Ryals (W.O.), 600 ft. from S line and 150 ft. from W line of lease ..... T.D. 5,718 ft.; trying to sidetrack 5,126 ft.
United Prod. Co.'s No. 5 Mitchell (W.O.), Refugio Townsite, 150 ft. from N line and 438 ft. from E line of tract ..... T.D. 6,446 ft.; to plug back.
United Prod. Corp.'s No. 4 W. J. Fox, 2,600 ft. NE along SE line from SE cor. of Wm. Hews and L. Brown Sur., thence 1,420 ft. NW at right angles ... Moving in.
United Prod. Corp.'s No. 5 W. J. Fox, 2,150 ft. NE along SE line from SE cor. of Wm. Hews and L. Brown Sur., and thence 890 ft. NW at right angles ..... Moving in.

SOUTH LOUISIANA FIELDS
JENNINGS—ACADIA PARISH

Russell Campbell's No. 3 Syndicate (D.D.), 475 ft. S and 350 ft. W of NE cor. Sec. 41-9s-2w ..... No report.
Kathleen Oil Co.'s No. 1 Syndicate fee (W.O.), Sec. 46-9s-2w ..... Twisted off 4,025 ft.; shut down.
Reliable Oil Co.'s No. 2 Rawson (D.D.) ..... No report.

IOWA—CALCASIEU AND JEFF DAVIS PARISHES

Shell Petroleum Corp.'s No. 2 Heyd, 225 ft. out of NE cor. of Sec. 13-9s-7w ..... Drlg. hard sand 6,422 ft.
Shell Petroleum Corp.'s No. 1 Fontenot, Sec. 7-9s-6w, 450 ft. due E No. 2 Heyd ..... T.D. 5,146 ft.; drlg. plug.

EDGERLY—CALCASIEU PARISH

S. A. Emerson et al's No. 15 Hunter, Sec. 21-9s-11w, 265 ft. SE of No. 10 ..... Spudded.

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 2 Martha Moss (W.O.), 120 ft. S and 56 ft. W of NE cor. SE NW of Sec. 8-10s-9w... Drlg. shale and lime 6,740 ft.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 732 fee (W.O.), 965 ft. N and 2,065 ft. W of C of Sec. 29-9s-10w ..... Drlg. shale and lime 4,020 ft.
Union Sulphur Co.'s No. 768 fee, 175 ft. N and 188 ft. W of SE cor. SW NW of Sec. 29-9s-10w ..... Oil sand 3,685-90 ft.; cmtd. csg.
Union Sulphur Co.'s No. 769 fee, 295 ft. S, 918 ft. W of C of Sec. 29-9s-10w ..... Drlg. hard lime 3,690 ft.

VINTON—CALCASIEU PARISH

Gulf Ref. Co.'s No. 1 Gray (D.D.), 125 ft. W and 85 ft. N of SE cor. NE SE of Sec. 33-10s-12w ..... Abnd. 3,250 ft.
Marrs McLean's No. 13 Gray, 464 ft. E and 460 ft. S of C of Sec. 30-10s-12w ..... Drlg. sand and boulders 1,012 ft.
Vinton Petroleum Co.'s No. 1 Matilda Gray (20 acres), 48 ft. N and 89 ft. W of SE cor. SW NE of Sec. 23-10s-12w (D.D.) ..... T.D. 3,214 ft.; sidetracked 3,016 ft. to sand 3,053 ft.; cemented.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 23 Watkins (W.O.), 2,495 ft. W and 132 ft. N of SE cor. Sec. 13-12s-10w ..... T.D. 2,844 ft.; set whipstock 2,573 ft.; shut down.
Calcasieu Oil Co.'s No. 8 Dorion, 1,280 ft. S and 792 ft. E of NW cor. Sec. 24-12s-10w ..... Spudded.
J. G. Sutton's No. 6 Irwin, 1,820 ft. N and 1,845 ft. W of SE cor. of Sec. 13-12s-10w ..... Spudded.
Union Sulphur Co.'s No. 1 Gulf land (Pure Oil Co. lease), 1,420 ft. N, 400 ft. W of SE cor. Sec. 11-12s-10w ..... Shale and lime 5,060 ft.

PORT BARRE—ST. LANDRY PARISH

W. A. Aggers' No. 1 Cochran, 250 ft. S and 250 ft. E of NW cor. of Fractional Sec. 21-6s-5e ..... Drlg. sandy shale 3,305 ft.
Port Barre Oil Co.'s No. 1 Sibille, Sec. 20-6n-5e, 600 ft. S and 124 ft. E of NW cor. 30-acre tract ..... Sand showing oil 3,384 ft.; cmtd. 6⅝-in. csg 3,372 ft.
The Texas Company's No. 11 Botney Bay, N 82 deg. 10 min. W 474 ft. from NE cor. of tract and N 7 deg. 50 min. E 105 ft. in Sec. 4-6s-5e ..... Spudded.

MISCELLANEOUS WILDCATS
TEXAS
AUSTIN COUNTY

C. O. Farrington et al's No. 1 Jackson, Brookshire, S. F. Austin Sur. No. 10, 750 ft. NW of Empire Gas & Fuel Co.'s No. 1 Jackson and 250 ft. S of NW line... Cmtd. 10-in. csg. 60 ft.; standing.
Grant & Baker's No. 1 Chesley, W. C. White Sur., 150 ft. from NW line and 150 ft. from SW line of 26-acre tract (northeast of Raccoon Bend Field) ..... Cmtd. 10-in. csg. 196 ft.; standing.
O'Hara Oil & Gas Co.'s No. 1 Neilius, J. C. Cummings Hacienda Sur., 650 ft. N of No. 1 Schroeder in 18-acre tract, north edge Mill Creek ..... Derrick.
Pomacal & Boletka's No. 1 Schebajsa, 329 ft. N, 78 deg. E of N cor. B. Dottery Sur., near center of SW line of S. F. Austin 4 League on west fork of Mill Creek.. Shut down 1,740 ft.
Vogelpohl et al's No. 1 Trenchman, J. Cummings Hacienda Sur., 319⅓ ft. from E line, 1,244 ft. from S line of 32¼-acre tract ..... Drlg. gumbo 710 ft.

BRAZORIA COUNTY

John Deering's No. 1 C. W. Chapman, 294 ft. from S line and 104 ft. from E line of Lot 2, Andrew Robinson Sur. ..... Preparing to resume drlg. 1,514 ft.
The Texas Company's No. 2 Belcher, Manvel (D.D.), 1,723 ft. southeasterly and 1,231 ft. southwesterly at right angles out of N cor. of lease, Harvey Little Sur. ..... Pulling liner to deepen, 5,602 ft.
United Oil Syndicate's No. 2 Levitt, John Peske Sur., 75 ft. NW of No. 1 ..... Drlg. gumbo 745 ft.

BURLESON COUNTY

Marek & Son's No. 3 A. Marek, N. McFaddin Sur., 1,068 ft. N and 225 ft. W of SE cor. of tract ..... Standing 2,210 ft.
M. O. & T. Corp.'s No. 1 Rigers ..... Shut down 2,050 ft.

COLORADO COUNTY

Coyle-Concord Oil Co.'s No. 1 Nelson, I.&G.N. Sur., Sec. 43 ..... Moving in.

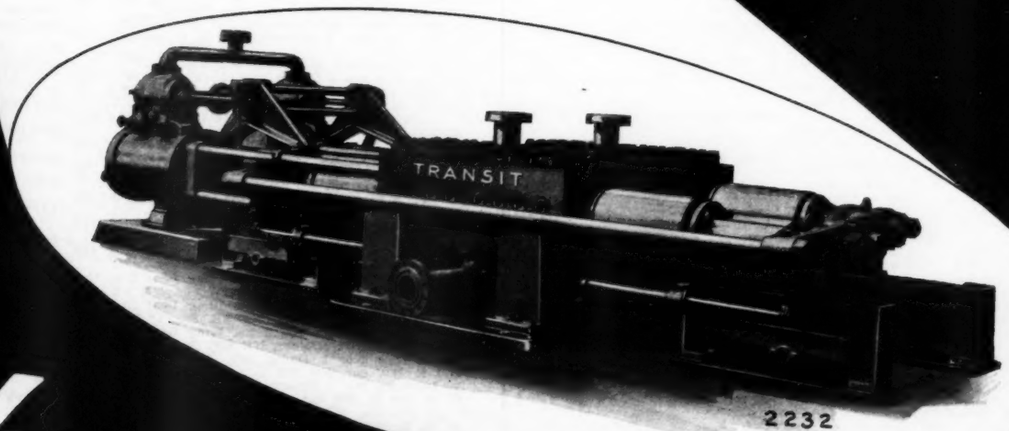
FORT BEND COUNTY

O'Hara et al's No. 1 Brown, Pilant Lake, Wm. Barrett and Abner Harris Sur., 600 ft. out of SW cor. of Brown 600-acre tract ..... Drlg. gumbo 2,614 ft.
Naylor & DeCosta's No. 1 Naylor, 6,350 ft. N, 55 deg. E from SW cor. 653-acre tract in Christman Sur. ..... Drlg. sand and gravel 302 ft.

GRIMES COUNTY

Barnett et al's No. 1 Dodd, Timothy Jones Sur., 280 ft. N. Cobb & Rasmussen's No. 1 Dodd ..... Rock 1,792 ft.
Rianjo Oil Co.'s No. 3 Cuthrell, Patrick B. O'Connor Sur., 150 ft. S, 10 deg. E of No. 2 ..... Shut down 1,150 ft.

TRANSIT hot oil PUMPS are in the spotlight



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E. L. Wilson Hardware Company

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F. C. Richmond Machinery Co.

NATIONAL TRANSIT
PUMP & MACHINE CO.
OIL CITY, PA.

PHOENIX, ARIZ.
Pratt-Gilbert Co.

LOS ANGELES
Republic Supply Company of California

ST. LOUIS, MO.
Reeves & Skinner Machinery Co.

NEW YORK PHILADELPHIA CLEVELAND PITTSBURGH LOS ANGELES HOUSTON TULSA NEW ORLEANS

Stanolind Oil & Gas Co.'s No. 1 Mary Sullivan, A. Yeamen's Sur., 998 ft. out of SE cor. of 712-acre tract ... Drlg. sand and shale 2,378 ft.

HARRIS COUNTY

Flanigan et al's No. 1 Woodburn, Genoa, August Whitlock Sur., 200 ft. out of NW cor. of tract ..... Location.
Shubert & Alexander's No. 1 Herman Hale, 1,058 varas E of NW cor. R. A. Hanks Sur., thence 790 varas S and thence 70 varas W 74 deg. ..... Washing to bottom 2,720 ft.

JACKSON COUNTY

Chicago Gulf Corp.'s No. 4 Druschell (W.O.) ..... No report.
Chicago Gulf Corp.'s No. 10 Druschell, Hayes Sur., 1,300 ft. NW of No. 3 ..... No report.

JASPER COUNTY

Hext Drlg. Co.'s No. 1 Flourney, B. F. Jones Sur., 900 ft. NW of Helmerich & Payne's No. 1 Flourney ..... T.D. 4,005 ft.

JEFFERSON COUNTY

Brown et al's No. 1 M. O. Todd, 200 varas S and 58 varas E of NW cor. of Wm. Carr Sur. ..... Gumbo 3,541 ft.; cmtd. 9⅝-in. csg. 3,524 ft.
John I. Pipkin and Elam's No. 1 Broussard, McGaffey Sur., 800 ft. from S line in center E and W of 205-acre tract ..... Shut down 2,300 ft.
C. R. Tolliver et al's No. 1 Tolliver, Duches Sur., 3,500 ft. from W line and 1,500 ft. S of Pine Island Bayou.. Drill stem stuck 4,125 ft.; pulled derrick in.

LIBERTY COUNTY

Devore Oil Co.'s No. 1 Finley, 10,500 ft. from E line and 2,000 ft. from S line of A. B. Hardin Sur. ..... Shut down 875 ft.
Hamm et al's No. 1 Harvard, Davis Hill ..... Gumbo 1,015 ft.; shut down.
J. T. May et al's No. 1 Dunman, J. C. Martin League.... Location.

MATAGORDA COUNTY

Dr. Griffith et al's No. 3 Baer, Big Hill, 5,000 ft. N, 3,000 ft. E from SW cor. of Seth Ingram Sur. ..... Drlg gumbo 902 ft.
United North & South Oil Co.'s No. 1 Stoddard, J. C. Keller Sur., 150 ft. W and 545 ft. N of SE cor. Blk. 55, Buckeye Townsite ..... Corrected depth 7,828 ft.; sand. showing oil; trying to set 6⅝-in. csg. 7,770 ft.

MONTGOMERY COUNTY

Heep Oil Corp.'s No. 1 Cartwright, 2,851.6 ft. southerly along W line from NW cor. of John D. Davis Sur. and thence 450 ft. from said line ..... Sand and shale showing oil 4,956 to 5,053 ft.; setting 6⅝-inch csg. at 4,960 ft.
Heep Oil Corp.'s No. 1 Roberts, Wm. H. Harrison Sur., 450 ft. out of SE cor. of tract ..... Moving in.
Heep Oil Corp.'s No. 1 Hammond, Charles B. Stewart Sur., NE cor. of Hammond 232.5-acre tract ..... Location.
Pevehouse Oil Co.'s No. 1 Sealey, Jas. Pevehouse Sur., 1,575 ft. N of N line of Horton & Woodson's 1,562-acre tract and 2,226 ft. E of W line of H.&W. 1,870-acre tract ..... No report.
Strake Oil Corp.'s No. 2 South Texas Development Co., Theo. Slade Sur., 1,550 ft. S. of No. 1 in Blk. 88 ..... Location.
Wilhite et al's No. 2 Juergus, 7,175 ft. from W line and 75 ft. from S line of D. James Sur. ..... T.D. 4,890 ft.; washing to bottom.

NEWTON COUNTY

R. T. Briscoe et al's No. 1-A Joe Inman, 1,950 ft. E and 800 ft. N of SW cor. J. M. Scott Sur. ..... Shut down 1,795 ft.

ORANGE COUNTY

Altex Oil Co.'s (Veteran Oil Co.) No. 1 Reed, A. Nelson Sur. No. 1, 500 ft. from N line and 250 ft. from E line of tract ..... Drlg. hard sand and shale 4,050 ft.
Crew Oil Co.'s No. 1-A Mansfield, 50 ft. E of No. 1 ..... Shut down 2,275 ft.

POLK COUNTY

Freeman et al's No. 2 Freeman ..... Shut down 3,162 ft.
T. B. Hoffer's No. 1 Saner-Ragly Lbr. Co., 300 ft. out of most northerly cor. of most easterly County School Land Abst. 271 ..... Shut down 1,517 ft.

REFUGIO COUNTY

Bianco Creek Oil Co.'s No. 1 Damaan, 150 ft. from N line and 150 ft. from W line of Blk. 14, Bonnie View Ranch Subd. ..... Shut down 4,627 ft.
J. C. Doxin's No. 1 Peck, 450 ft. S, 150 ft. E of NW cor. of S half of Sec. 24, Bonnie View Ranch Subd., Estaban Lopez Sur. ..... Shut down 100 ft.
Humble Oil & Ref. Co.'s No. 2 O'Connor, John Keating Sur., 13,625 ft. N of S line at right angles and 8,158 ft. W of E line at right angles ..... Drlg. shale 3,193 ft.

SAN JACINTO COUNTY

E. P. Edwards' No. 1 J. R. Bennett, Cold Springs ..... Shut down 750 ft.
Seven Wells Oil Co.'s No. 1 Foster Lumber Co., 3,000 varas from the E line and 2,000 varas from the S line of H. Aisbury Sur. ..... Location.

TRINITY COUNTY

John Deering's No. 1 J. B. Gibson ..... Shut down 2,017 ft.
Scientific Producers Co.'s No. 1 Thompson, L&G.N. Sur. No. 47, 50 ft. out of NE cor. of H. K. Thompson 199-acre tract ..... Shut down 1,191 ft.

TYLER COUNTY

King Oil Co.'s No. 1 Caswell ..... Sand and shale showing oil 1,258 ft.; cem. 6-in. casing 1,218 ft.; standing.
Allied Pet. Co.'s (Texas Southern Pet. Co.) No. 3 Wilson, Mrs. E. Cherry Sur. No. 795, 1,500 varas from W line and 600 varas from N line ..... Shut down 5,025 ft.

VICTORIA COUNTY

Bunte et al's No. 2 Keeran, Martin DeLeon Sur., 200 ft. E of No. 1 ..... Derrick.
Houston Oil Co.'s No. 1-A McFaddin, 200 ft. from NE line, 240 ft. from SE line of I.R.R. Sur. No. 20 ..... No report.
T. B. Slick Estate's No. 2 McFaddin, J. Varian Sur., 3,500 ft. NW of No. 1 and 1,100 ft. NE at right angles to SW line of lease ..... No report.
The Texas Company's No. 4 McFaddin, 86 deg. E. 1,728½ ft. from NE cor. of Andrew J. Gray Sur. in John M. Rine Sur. ..... Drlg. gumbo 2,274 ft.

WALKER COUNTY

Hart Oil Co.'s No. 1 Thompson Lbr. Co., Jose Ortega Sur., 1,265 ft. S, 1,876 ft. W of SW cor. of J. B. Gibson's 71-acre tract ..... Shut down for repairs 2,090 ft.

WALLER COUNTY

McDaniel and associates' No. 1 Citizens State Bank, B.B.B.&C. Sur., C of 150-acre tract ..... No report.

SOUTH LOUISIANA

ASCENSION PARISH

McElroy Pet. Co.'s No. 2 Lacey, 150 ft. S, 150 ft. W of NE cor. of Sec. 29-10s-4e ..... Shut down 4,515 ft.

CALCASIEU PARISH

Crawford Doyle's No. 1 Johnson, Sec. 23-9s-13w ..... Shut down 875 ft.
L. O. Davis' No. 1 Industrial, Sec. 29-9s-10w ..... Standing 6,568 ft.
Hill Oil Co.'s No. 1-W. S. Vincent et al, 642 ft. W, 75 ft. N from SE cor., Sec. 25-10s-10w ..... Shut down 3,255 ft.
Wilfred Lahay's No. 1 Jardell, Sec. 16-10s-12w ..... Shut down 3,650 ft.
Success Oil Co.'s No. 1 Hewitt, 90 ft. out of SW cor., Sec. 11-9s-11w ..... Rig.

CAMERON PARISH

Brownie-Babbette Oil Co.'s No. 1 R. A. Moore, 562 ft. W, 50 ft. S of NE cor. E half SE of Sec. 18-12s-12w.. Drlg. 3,146 ft.

EVANGELINE PARISH

Emile LeDeau's No. 1 Vidrine, 260 ft. W and 350 ft. S of NE cor. of Sec. 47-3s-2e ..... Drlg. gumbo 1,475 ft.

IBERIA PARISH

Warrick Oil Co.'s No. 1 Bernard, 912 ft. N and 150 ft. E of SW cor. Sec. 54-12s-7e ..... Rig.
Standard Oil Co.'s No. 2 Myrtle Grove-Wilbert, Bayou Choctaw, 2,040 ft. N and 600 ft. W of C of Sec. 52-9s-11e ..... Drlg. rock 2,920 ft.
Standard Oil Co.'s No. 2 Gay, Bayou Choctaw, 4,500 ft. N and 600 ft. E of SW cor. SE of Sec. 52-9s-11e..... Drlg. 5,260 ft.
Standard Oil Co.'s No. 7 Schwing, Bayou Blue, 1,359 ft. N and 1,856 ft. E of C of Sec. 74-9s-10w ..... Drlg. shale 4,856 ft.

LA FOURCHE PARISH

Pop Oil Co.'s No. 1 Esponge Vizier, Sec. 26-21-22e, 78 ft. N, 289 ft. E of The Texas Company's No. 4 L.L.&E. ..... Oil sand 3,711-19 ft.; cmtd. 6⅝-in. csg. 3,710 ft.; drld. plug.
State Prod. Co.'s No. "D" W. H. Stark, 1,935 ft. S and 1,550 ft. W of NE cor. Sec. 72-15s-15e ..... Sulphur test.
The Texas Company's No. 4 L.L.&E., Leesville, Sec. 26-21s-22e ..... Set 30½ ft. of 5 3-16 in. screen at 3,745 ft.; comp. flowing 1,500 bbls., 40 per cent water; 192 lbs. pressure; ½-in. choke; 26.2° gravity (cor.).

POINTE COUPEE PARISH

Grand Bay Oil & Gas Co.'s No. 1 Moniotte, 10,140 ft. S and 13,450 ft. E of NW cor. Twp. 5s-11 in Sec. 34.... Shut down 310 ft.

TERREBONNE PARISH

Freeport Sulphur Co.'s No. 1 Wurzlow, 1,200 ft. N and 2,600 ft. W of SE cor. Sec. 8-22s-18e ..... Cap rock 736 ft.
La. Gas & Fuel Co.'s No. 2 Minor, 3,480 ft. S and 1,980 ft. E of NW cor., Sec. 3-18s-16e ..... Drlg. shale 5,913 ft.
The Texas Company's No. 5 State, Dog Lake, 2,270 ft. S and 450 ft. E of NW cor. of Sec. 5-22s-18e ..... Drlg. gumbo 1,260 ft.
The Texas Company's No. 2 La.L.&E., Bay Junop ..... Rig.
The Texas Company's No. 10 State, Lake Barre ..... Location.
The Texas Company's No. 12 State Lake Barre ..... Drlg. sticky shale 3,496 ft.
The Texas Company's No. 14 State Lake Barre ..... Location.

VERMILLION PARISH

Pure Oil Co.'s No. 2 Alliance Trust Co., Gueydan 1,-875 ft. E and 950 ft. S of NW cor. of Sec. 34-11-1w.. Sand 3,552 ft.

WEST FELICIANA PARISH

Putnam Synd.'s No. 3 Como Plantation, Sec. 51-1s-14w... Shut down 2,449 ft.

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 40)

RICHLAND PARISH

National Gas Co.'s No. 1 Singletary, 1,980 ft. N, 660 ft. W, SE cor., Sec. 20-18n-7e ..... S.D. 2,515 ft.

SABINE PARISH

Baird & Hunter's No. 1 Petty, Sec. 11-7-11 ..... Drlg. plug 2,370 ft.
Beene et al's No. 1 Esernack, Sec. 2-7-13, 1,070 ft. S, 250 ft. W, NE cor. ..... S.D. 2,105 ft.
Baird & Stone's No. 1 Quayhagien, Sec. 11-7-11 ..... Testing 2,535 ft.
R. W. Boulding's No. 1 Williams, Sec. 17-7-10, 200 ft. S and E, NW cor. SW NE ..... Derrick pattern.
Broderick & Calvert's No. 1 Costello, Sec. 2-7-14, 375 ft. S, 150 ft. W, NE cor. SE NW ..... Rigging up.
Coates Pet. Co.'s No. 1-B S. S. Martinez, Sec. 3-7-13, 330 ft. S and W, NE cor. SE NE ..... Rigging up.
W. M. Coates' No. 1 Stille, 330 ft. N, 660 ft. W, SE cor., Sec. 35-8-13 ..... Derrick.
Craig et al's No. 1 Travis, Sec. 13-7-11, 200 ft. S and E, NW cor. SE NW ..... Location.
B. A. Ferrell's No. 1 Haley, Sec. 6-7-12, 300 ft. S and E, NW cor. NW SW ..... Set 10-in. 103 ft.
Frank Foster, Inc.'s No. 1 Stephens, Sec. 20-9-11, 330 ft. S and W, NE cor. NW NW ..... Arranging to bail 3,358 ft.
R. L. Gay, tr.'s No. 1-A Long Bell Lbr. Co., 430 ft. S, 200 ft. W, NE cor. NW NW, Sec. 10-8-13 ..... Testing 4,772 ft.
E. G. Hall's No. 1 Williams, SE NW Sec. 3-7-10 ..... Set 10-in. 100 ft.
Root Ref. Co.'s No. 1 Peterson, 330 ft. N and E of C, Sec. 34-7-13 ..... Drlg. plug 2,495 ft.
Geo. LeGrand's No. 1 McGough, Sec. 3-8-10 ..... Derrick.
J. J. Keen, tr.'s No. 1 Belton (no check), Sec. 31-9-13.... S.D. 3,120 ft.
A. D. King, tr.'s No. 1 Germain, Sec. 7-7-10, 330 ft. E, 518 ft. N, SW cor. NE NE ..... Rigging up.
W. F. Lacey's No. 3 McNeely, Sec. 14-7-11, 300 ft. S and E, NW cor. NE NE ..... Derrick.
Jack Lanier's No. 1 Petty, Sec. 11-7-11, 330 ft. N and W SE cor. NE SE ..... Location.
Mays & Mead's No. 1 Delong, Sec. 5-7-10, 275 ft. N, 175 ft. W, SE cor. SE SW ..... Derrick pattern.
E. F. Neely's No. 1 Cobb & Alford, Sec. 14-7-11, 200 ft. S, 100 ft. E, NW cor. NE SW ..... 1,500 ft. oil in hole at 2,485 ft.
E. F. Neely's No. 2 Clanan, Sec. 14-7-11, 350 ft. N, 100 ft. W, SE cor. SE NW ..... Set 6-in. 2,434 ft.
C. E. Neff, tr.'s No. 1 Snell, Sec. 9-7-11, 350 ft. N, 660 ft. W, SE cor. Sec. ..... Derrick.
Palmer & Smitherman's No. 1 La. Long Leaf Lbr. Co., Sec. 12-7-11, 330 ft. S and E, NW cor. NE SE ..... Location.
Palmer & Smitherman's No. 2 La. Long Leaf Lbr. Co., 330 ft. S and W, NE cor. NE SE, Sec. 12-7-11 ..... Location.
Palmer & Smitherman's No. 3 La. Long Leaf Lbr. Co., 330 ft. S and W, NE cor. NE SW, Sec. 12-7-11 ..... Location.
J. F. Palmer's No. 1 Davis, Sec. 17-7-10, 200 ft. S and E, NW cor. NE NW ..... Location.
H. W. Perritt's No. 1 Brown Lbr. Co., Sec. 6-7-10, 330 ft. N and E, SW cor. SW SE ..... Testing 2,385 ft.
Rowe et al's No. 1 Williams, Sec. 13-7-11, 600 ft. S, 40 ft. E, NW cor. SW ..... Drlg. 2,445 ft.
Scully & Beach's No. 1 Lafitte, Sec. 13-7-11, 100 ft. S, 660 ft. E, NW cor. NW ..... Derrick.
H. R. Smith et al's No. 1 La. Long Leaf Lbr. Co., Sec. 12-7-11, 330 ft. S and W, NE cor. NW SW ..... Location.
H. R. Smith et al's No. 2 La. Long Leaf Lbr. Co., 330 ft. N and W, SE cor. NW SW, Sec. 12-7-11 ..... 1,500 ft. oil in hole at 2,536 ft.
J. E. Smitherman's No. 1 Smith, Sec. 7-7-10, 330 ft. S and E, NW cor. NW SW ..... S.D.; W.O. 3,014 ft.
Southland Drlg. Co.'s No. 2 F. Martinez, Sec. 11-7-13, 330 ft. S and E, NW cor. NE NW ..... Derrick pattern.
Southland Drlg. Co.'s No. 1 Gilbert Martinez, Sec. 2-7-13, 330 ft. N and W, Sec. cor. SW SW ..... Derrick pattern.
State Prod. Co., Inc.'s No. 1 Davis, Sec. 17-7-10, 150 ft. N and E, SW cor. SW NW ..... Location.
A. F. Tarver's No. 3 Cutrer, Sec. 12-7-11, 1,120 ft. E, 300 ft. N, SW cor. NW ..... Drlg. 2,375 ft.
The Texas Co.'s No. 2-B Grauque, Sec. 10-7-13, 1,700 ft. W, 330 ft. S, NE cor. Sec. ..... Derrick.
C. H. Tuttle's No. 1 Travis, Sec. 13-7-11, NE NW ..... Set 6-in. 2,400 ft.
Williams & Spiers' No. 1 Williams, Sec. 31-8-10, SE cor. SE SW ..... Location.

TENSAS PARISH

A. R. Willis et al's No. 1 Currey, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... S.D. 2,545 ft.

WEBSTER PARISH

J. K. Wadley's No. 1 Matthews, Sec. 11-23-9, 130 ft. N, 330 ft. E, SW cor. SW NE ..... Set 12½-in. 177 ft.

ARKANSAS

COLUMBIA COUNTY

Kendall Oil Co.'s No. 1 Fullenweider, Rhea & Kitchen, Sec. 13-17-22 ..... S.D. 814 ft.

CLAY COUNTY

S. C. Jeffus' No. 1 Underwood, 510 ft. N, 350 ft. W, C, NW SE, Sec. 4-20-3 ..... S.D. 1,350 ft.

CLEVELAND COUNTY

Crum & Stillwell's No. 1 E. R. Bell, Sec. 10-10s-12 ..... Rigged up and S.D.

CLEBURNE COUNTY

(Cable tools)

Donnelly-Craver et al's No. 1 Donophan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... S.D. 3,740 ft.

DALLAS COUNTY

J. H. James, tr.'s No. 1 Fordyce Lbr. Co., 200 ft. S, 200 ft. E, NW cor. SE, Sec. 11-9-15 ..... D.S. stuck 2,575 ft.
Zepp O. & G. Co.'s No. 3 Hillman, Sec. 20-10-13, 180 ft. N, 450 ft. E, SW cor. NW NE ..... Location.

DREW COUNTY

Co-Operative Dev. Co.'s No. 1 Ogles, Sec. 35-15-5, 330 ft. S and E, NW cor. NE NW ..... S.D. 1,890 ft.

HOT SPRINGS COUNTY

Star Oil Co.'s No. 1 Cunningham, 285 ft. S, 285 ft. W, NE cor., Sec. 11-5-16 ..... Washing to bottom 1,300 ft.

LINCOLN COUNTY

Lawrence Cook, tr.'s No. 1 McGhee Planting Co., 420 ft. S, 200 ft. W, NE cor. NE SW, Sec. 5-8-7 ..... S.D. 2,800 ft.

LITTLE RIVER COUNTY

Roberts Oil Co.'s No. 1 H. J. Russell, 330 ft. E, 330 ft. S, NW cor., Sec. 25-12-19 ..... Location.

LOGAN COUNTY

J. H. Flowers' No. 1 J. H. White, Sec. 13-6-26 ..... S.D; W.O. 3,570 ft.

MILLER COUNTY

W. E. Noel et al's No. 1 Dickson hrs., 1,980 ft. W, 660 ft. S, NE cor., Sec. 11-20-27 ..... S.D. 1,955 ft.

OUACHITA COUNTY

Copenhaven et al's No. 2 Berg, C SE SE, Sec. 13-15-17.. Fishing for D.S. 2,011 ft.
McLean et al's No. 1 L. D. Neely, Sec. 23-15-16, 200 ft. N and W, SE cor. NE SW ..... S.D. 102 ft.

PIKE COUNTY

E. R. Henderson's No. 1 Tilyou, 660 ft. W, 500 ft. S, NE cor. NE SE, Sec. 26-8-24 ..... T.A. 2,909 ft.
E. R. Henderson's No. 1 J. L. Lee, 400 ft. S, 350 ft. E, NW cor. SW SE, Sec. 31-8-24 ..... S.D; W.O. 1,020 ft.
E. R. Henderson's No. 1 W. B. East, 200 ft. S, 150 ft. W, NE cor., Sec. 13-9-23 ..... Coring 2,037 ft.

PRAIRIE COUNTY

Powell Creek O. & G. Co.'s No. 1 Kloss, NE SW, Sec. 3-4n-6w ..... Partly rigged up and S.D.

SCOTT COUNTY

Heavener O. & G. Co.'s No. 1 Riser, Sec. 36-4-26 ..... S.D; T.D. 1,436 ft.
Waldron O. & G. Co.'s No. 1 White, NE cor. SW NW, Sec. 17-3n-29 ..... S.D. 1,860 ft.

SEVIER COUNTY

Tristate Oil Co.'s No. 1 Grimble, Sec. 34-8-22, S½ SW .. S.D. 950 ft.

ST. FRANCIS COUNTY

Field & Jones No. 1 F. M. White, Sec. 1-4n-2e, SW cor. NW ..... S.D. 700 ft.

UNION COUNTY

Drillers Oil & Dev. Co.'s No. 1 Pickering, 220 ft. N, 668 ft. E, SW cor. NW NE, Sec. 1-17-16 ..... T.A. 2,134 ft.
Drillers Oil & Dev. Co.'s No. 1 Haynie, Sec. 1-17-16, 200 ft. S, 300 ft. E, NW cor. NW SE ..... Testing 2,138 ft.
H. H. Helms' No. 1 C. H. Murphy, NE cor. NW NE, Sec. 31-16-14 ..... Testing 2,796 ft.
L. M. Hill et al's No. 1 J. W. Barnes, Sec. 21-19-16, NE cor. Sec. ..... Derrick.
Sunby et al's No. 2 Perdue, Sec. 33-16-14, 75 ft. S, 150 ft. E, NW cor. Sec. ..... Rebuilding derrick 1,690 ft.
Wilson & Chapman's No. 1 King, Sec. 3-18-13, 330 ft. N and E, SW cor. NE NE ..... Derrick.
Wilson & Chapman's No. 1-A D. Norman, 330 ft. S and E, NW cor. N½ NE SE, Sec. 3-18-13 ..... Derrick.
Wilson & Chapman's No. 1 K. D. Parker, Sec. 3-18-13, 330 ft. N and E, SW cor. S½ NE SE ..... Testing 3,576 ft.

WASHINGTON COUNTY
(Cable tools)

C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... S.D. for funds 1,795 ft.

YELL COUNTY
(Cable tools)

Tegmeier & Luckett's No. 1 Falcon, Sec. 36-7-21 ..... S.D. 5,710 ft.

EAST TEXAS
BOWIE COUNTY

Logan & Elliott's No. 1 Smith, 9,600 ft. S, 2,500 ft. W, NE cor. Chas. Lewis Sur. ..... S.D. 4,505 ft.
Tarkington & Jones' No. 1 W. W. Whybark, 200 ft. S, 200 ft. W, SW cor. J. H. Dyer Sur. ..... S.D. 1,880 ft.
Lee Timberlake et al's No. 2 Tidwell, 2,510 ft. N, 655 ft. W, SE cor. T. M. Rice Sur. ..... S.D. 3,000 ft.

CASS COUNTY

J. F. Morrisey's No. 1 T. J. Wilson, 1,088 ft. S of N line, 2,376 ft. E of W line of H.R.S., J. R. McFarland Sur. ..... S.D. 3,670 ft.
Davis & Pigg's No. 1 Roy Bryan, SW cor. Roy Bryan 88-ac. tr., Albert H. Lattimer Sur. ..... S.D. 2,860 ft.
Wm. S. King's No. 1 T. R. Richey, 1,450 ft. N, 1,600 ft. W, SE cor. Lavinia Morenew Sur. ..... Drlg. 1,910 ft.
C. E. Murdock's No. 1 First National Bank, Evans Watson Sur. ..... S.D. 4,390 ft.
John C. Rogers' No. 1 I. E. Lanier, 573 ft. N, 879 ft. W, SE cor. Lanier 86 ac. in K. E. Welborn Sur. .... S.D. 2,280 ft.
Olds & King's No. 2 Anthony, John C. Byers Sur. .... S.D. 1,760 ft.
John C. Rogers et al's No. 1 W. Q. Henderson, 3,100 ft. S, 3,100 ft. E, NW cor., Wm. Davis Sur. ..... S.D. 960 ft.

HARRISON COUNTY

Gochee et al's No. 1 Davidson, NW cor. R. W. Starr Sur.. Location.
Lloyd Oil Corp.'s No. 1 E. S. Timmons, 150 ft. from N line to 250 ft. from E line of 105-ac. tr., Findley Sur. ..... S.D. 4,195 ft.
Ryan Cons. Pet. Corp.'s No. 1 J. M. Fuhr, 1,300 ft. N of NW cor. T. J. Copelin Sur., 1,675 ft. SW at right angles to NW SE line of O'Neal Sur. ..... Derrick.

MARION COUNTY

Baunoch Dev. Co.'s No. 1 Miller, 725 ft. N, 1,470 ft. E, SW cor. H. Fulgram Sur. (was Gist, Claunch & Dodson) ..... T.D. 3,280 ft.
Geo. Hindeman et al's No. 1 F. V. Lindsey, 2,500 ft. S, most northerly N line, 3,555 ft. E most easterly W line, Alexander Albright Sur. ..... S.D. 2,380 ft.

PANOLA COUNTY

Hoffer et al's No. 1 Cameron Lbr. Co., center 1,306-ac. tr. in W. M. A. LaGrove Sur. ..... Derrick.
Moses & Wallace's No. 1 Daniel, 600 ft. N and W lines, Mrs. Gerrell 100-ac. tr., SW cor. Isabel Hanks Sur... Spudded and S.D.
G. A. Davidson's No. 1 Latham, Wm. Rich. Sur. ..... S.D. 2,394 ft.
J. L. Nelson et al's No. 1 J. W. Williams, 300 ft. S, 700 ft. W, NE cor. Williams' 67-ac. tr. in James Hanks Sur. ..... S.D. 3,055 ft.
United Prod. Co.'s No. 2 Werner, 1,350 ft. N, 542 ft. E, SW cor. 95-ac. tr., B. C. Jordan Sur. ..... Drlg. 2,841 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossler, E. Hughhart Sur. .... S.D. 2,795 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edw. Dean Sur. .... S.D. 2,280 ft.

SHELBY COUNTY

Chapperell Oil Co.'s No. 2 Holt, Matthew Moore Sur. ... Reaming 3,225 ft.
Harry Elliott's No. 1 Pickering Lbr. Co., 1,000 ft. N, 150 ft. E, SW cor. 361-ac. tr., G. H. Patterson Sur... W.O., S.R. 1,543 ft.
Fuller & O'Brien Bros.' No. 1 Frost-Johnson Lbr. Co., 200 ft. S, 150 ft. W, NE cor. 168-ac. tr., Aaron Castleberry Sur. ..... Set 10-in. 105 ft; drlg. 600 ft.
K. H. Francis' No. 1 John Mims, Mary Smith Sur. ..... S.D. 3,382 ft.
H. H. Gracey's No. 1 J. A. Morrison, 1,500 ft. N, 200 ft. E, SW cor. J. A. Morris' 109-ac. tr., William English Sur. ..... S.D. 2,600 ft.
Henry Maulding's No. 1 Frost Lbr. Co., NE cor. Frost Lbr. Co.'s 80-ac. tr., A. D. Fountain Sur. ..... S.D. 2,246 ft.
McRoby et al's No. 1 Windham, Wm. Leach Sur., on Windham 296-ac. tr. ..... S.D. 3,393 ft.
Ridgeway et al's No. 1 Polley, Dominguez Gonzales Sur., 3,180 ft. E of SW cor., 160 ft. N at right angles of Polley 457-ac. tr. ..... S.D. 822 ft.
Sedberry et al's No. 1 Pickering Lbr. Co., 600 ft. N, 400 ft. E, SW cor. Jane Stoddard Sur. ..... Location.
C. H. Tautenhahn's No. 1 J. C. Bogard, 300 ft. S, 900 ft. E, NW cor. J. C. Bogard's 52-ac. tr., Thomas Baker Sur. ..... S.D. 20 ft.
Western World's No. 1 Foster, Billingsby-Jeremiah Bowlin Sur. ..... S.D. 2,460 ft.
Wray & Dunbar's No. 1 C. A. Hayden, 600 ft. N and W SE cor. 152-ac. tr. in D. T. F. Yordt Sur. ..... Rigging up.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 40)

United Prod. Corp.'s No. 17 Steele, 1,320 ft. N, 660 ft. W, SE cor. C. D. Steele lse., in B. C. Jordan Sur. .. Location.

MISSISSIPPI
HINDS COUNTY

James Alexander, tr.'s No. 1 Pullen, Sec. 26-6n-1e, C NW NE ..... Rigging up.
Belhaven College's No. 1 fee, Sec. 35-6n-1e, 360 ft. E, 210 ft. S, NW cor. SE NW ..... Arranging to set csg. 2,310 ft.
Love Pet. Co.'s No. 1 Interior Lbr. Co., Sec. 2-5n-1e, 90 ft. W, 270 ft. N, SE cor. SW ..... Completed for 15,000,000 ft. gas at 2,440 ft.
McGuire et al's No. 1 Spring Lake, Sec. 11-5n-1e, 250 ft. N, 450 ft. W, from center of Sec. ..... Drlg. 405 ft.

RANKIN COUNTY

Meredith & Smith's No. 2 Strawder, Sec. 12-5n-1e, 2,582 ft. W, 300 ft. N, SE cor. NE ..... Location.
Muse & Muse's No. 1 Pate, Sec. 12-5n-1e, 220 ft. N, 1,150 ft. W SE cor. ..... Drlg. 100 ft.

WILDCAT OPERATIONS IN MISSISSIPPI

HINDS COUNTY

Company, farm and location—	Remarks:
Atkins et al's No. 1 Crane Lawrence, Sec. 23-6n-1e, 300 ft. E, 132 ft. N, SW cor. NE SE	Derrick.
Miss.-Minn. Oil Co.'s No. 1 Edwards Land Co., Sec. 23-6n-4w, 1,200 ft. N and E from center of Sec.	Drlg. shale 1,970 ft.
Southern Pet. Co.'s No. 1 Wilton (was Tri-State O. & G. Co.'s), 320 ft. E, 240 ft. N, SW cor. SE NE, Sec. 28-6-1e	Completed for 1,000,000 ft. gas at 2,505 ft.

JASPER COUNTY

Bay Springs Pet. Co.'s No. 1 Keyes, C NW NE, Sec. 2-12-9 ..... T.A. 3,408 ft.

LOWNDES COUNTY

Lowndes County Oil & Dev. Co.'s No. 1 Carr est., Sec. 34-17-16e, 1,320 ft. E, 330 ft. S, NW cor. Sec. ..... Rigging up.

NEWTON COUNTY

Bob Dalton's No. 1 Majure, 400 ft. N, 300 ft. E, SW cor. SE, Sec. 25-6n-11e ..... S.D. 840 ft.

NOXUBEE COUNTY

Thompson & Donohue's No. 1 Donohue, Sec. 25-16n-17e.. S.D. 1,735 ft.

RANKIN COUNTY

Attkisson & Dyer's No. 1 Valentour, 200 ft. S, 200 ft. E, NW cor., Sec. 18-5n-2e ..... Set 6-in. 2,428 ft.
James Alexander, tr.'s No. 1 Ridgeway-McGehee, Sec. 1-5n-1e, 200 ft. N, 320 ft. W, SE cor. NE SE ..... Completed for 30,000,000 ft. gas at 2,327 ft.
Baker et al's No. 1 Rankinside Dev. Co., Sec. 6-5n-2e, 200 ft. N, 200 ft. E, SW cor. NW SW ..... Set 6⅝-in. 2,360 ft.
Majestic O. & G. Co.'s No. 1 Elton Lbr. Co., Sec. 10-4n-3e. Derrick.
Orr et al's No. 1 Hanna, Sec. 14-5n-1e, 500 ft. E, 250 ft. S, NW cor. SW ..... Rigging up.

SCOTT COUNTY

M. U. Culley et al's No. 1 Owens, Sec. 2-8-9 ..... Derrick.

SHARKEY COUNTY

United Gas Public Service Co.'s No. 1 Lenhart, Sec. 14-14n-6w, 660 ft. N of C of S line of Sec. ..... Drlg. 1,490 ft.

WARREN COUNTY

Eagle Bend O. & G. Co.'s No. 1 Kiger, SW cor. SW SE, Sec. 9-18-2 ..... S.D. 2,607 ft.

WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 37)

PITTSBURG COUNTY

Ruby Ann Oil Co.'s No. 1 George, CEL NW SE, Sec. 3-4-16 ..... Drlg. 510 ft.
Tape Oil Co.'s No. 1 Fulton, SE Sec. 34-7-14 ..... S.D. 1,700 ft.
J. Morrison's No. 1 Fowler, NE SE Sec. 13-7-17 ..... Rig.
C. Kennedy's No. 1 Travis, C SW NE Sec. 15-7-14 ..... Rig.
C. Canady's No. 1 Jones, NW cor. Sec. 14-8-14 ..... Rig.

POTTAWATOMIE COUNTY

Clara Oil & Gas Co.'s No. 1 Unknown, SW NW NE, Sec. 1-9-4 ..... Location.
Barnsdall et al's No. 1 Gray, NE SW Sec. 25-6-4 ..... Drlg. 3,000 ft.

ROGER MILLS COUNTY

Ute Oil Co.'s No. 1 Williams, C SW Sec. 23-12-24w..... S.D. 5,150 ft.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w..... S.D. 3,420 ft.

WASHITA COUNTY

Miley Pet. Co.'s No. 1 Wolfe, NE SW Sec. 23-9-17w..... Rig.
Cooper & Terhune's No. 1 Blocker, NW cor. Sec. 29-8-19w ..... Drlg. 2,740 ft.; show oil 2,459-67 ft.; S.D. 2,757 ft.
Burns & Prince's No. 1 Deck, SW cor. Sec. 21-8-18 ..... S.D. 1,265 ft.

OKLAHOMA PANHANDLE
TEXAS COUNTY

Three Way Oil Co.'s No. 1 Crane, SW NW Sec. 11-1-1S... T.D. 4,720 ft.; to cement.

SOUTHERN OKLAHOMA
ATOKA COUNTY

Brookshire's No. 1 R. W. Rowland, NW NE SE Sec. 18-3s-10 ..... S.D. 1,720 ft.

BRYAN COUNTY

Bryan County Oil's No. 1 Childs, NW SE SW Sec. 7-7-10.. T.D 650 ft.
Bush et al's No. 1 Commerce Trust, NE cor. Sec. 35-6s-9 ..... T.D. 740 ft.; plugged back to 450-80 ft.

CARTER COUNTY

Lundy's No. 1 Spraggins, C NE NW SW Sec. 8-1s-2w .... S.D. 2,500 ft.

JEFFERSON COUNTY

Smith's No. 1 McCarty, SE NW NE Sec. 18-4s-8w ..... Location.

MARSHALL COUNTY

Starrett et al's No. 1 Henry, NE NW Sec. 22-7s-6 ..... Drlg. 165 ft.
Everett et al's No. 1 Agres, SE NE Sec. 14-7s-6 ..... S.D. 1,170 ft.
Newman et al's No. 1 Henry, NW cor. Sec. 22-7s-6..... Rig.

McCURTAIN COUNTY

Prassell et al's No. 1 Wagoner, SE NE Sec. 5-8s-27..... Drlg. 422 ft.
Stampfs et al's No. 1 Harris, SW NW SW Sec. 14-9s-25.. S.D. 2,731 ft.
Stewart's No. 1 Patterson, C SE SE Sec. 7-6s-24 ..... S.D. 1,411 ft.

PUSHMATAHA COUNTY

Whitehead et al's No. 1 Messer, SE SW SW Sec. 35-3s-18 ..... Fishing 1,030 ft.

STEPHENS COUNTY

Brown's No. 1 Hightower, SW SE NE Sec. 15-3s-5w..... Sand 990-1,004 ft; S.O; S.D.
George's No. 1 Ryan, NW SW NE Sec. 31-3-15..... S.D. 510 ft.

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OIL INFORMATION, service reports, Okla. City Field, showing Potentials, Allowables, Production and Pipe Line Runs. Price $5.00 per month. Clyde Kelly, 608 Perrine Bldg., Okla. City, Okla.

DESIRE connection with individual or company desirous of leasing drilling equipment, etc., capable of reaching a depth of not less than 5,000 feet. Please give details of your proposition, equipment, terms, etc. Have 400 acres in Sabine Parish, Louisiana, known as Zwolle Field. Production approximately 1,500 feet from land line. Address Box F-123, The Oil and Gas Journal, Tulsa, Okla.

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FOR SALE
Oil leases 88-form, in semi-wildcat, and proven territory, shallow field, Anderson County, Kansas. W. L. Morris Loan Co., Garnett, Kansas.

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LEASES AND ROYALTIES, any size tract, low prices, easy terms, near East Texas deep test. E. Croft, Proctor, Tex.

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MICHIGAN FIELDS

(Continued from Page 35)

some excitement among investors in lands southeast of the proven field who feel that the Solms test was inconclusive and point to other instances in which seepage of salt water has preceded flow of oil in abundantly producing wells.

Ogemaw County Test

Another important Michigan test is that of the Pure Oil Co. on the William T. Yeo farm, NE NE, Section 2, Horton Township, Ogemaw County, which found a pay in the Monroe formation, from which the well is rated as a 10-bbl. producer at a total depth of 3,600 feet, but may be drilled deeper to test the Trenton lime formation. Ogemaw County lies north of Gladwin and Arenac Counties; west of Iosco County; east of Roscommon and south of Oscola, and may mean the opening of a new field for Michigan.

New Locations

The Pure Oil Co. made a location for No. 2-A A. Bernard farm, SE SE, Section 8, Greendale Township, Midland County, also a location for No. 1 in the southeast corner of the T. E. McCann, E half NE, Section 7, same township. Mellon-Pollock Oil Co. made a location for a second test, 990 feet from the south line and 330 feet from the west line of the Lewis Thayer and others farm, S half SE, Section 22, Vernon Township, Isabella County. Same company's No. 3 in the southeast corner of the John Brief farm, N half SE, Section 22, same township, is reported at a depth of 2,000 feet.

For the first three months of 1932 there were 31 drilling permits issued by the Conservation Department of Michigan.

Saginaw County

An important test for oil and gas is to be made by the Athens Oil & Gas Co. on the Smith farm, 6 miles north of the town of Hemlock, in the western part of Saginaw County, and almost west of Saginaw. The rig is being installed, and the landowners in that part of the county are very enthusiastic over a test in their vicinity.

Mecosta County

Reports are that the Crystal Oil Development, Inc. of Grand Rapids, has secured a block of approximately 3,000 acres in Aetna Township, Mecosta County, and a test will be started as soon as weather permits. The contract work on the well has been let.

Isabella County Operations

E. S. Hammond's No. 1 Graham, NW NW SW, Section 22, Chippewa Township, is around 1,300 feet. Mellon-Pollock Oil Co.'s No. 3 John Brief farm, N half SW, Section 22, Vernon Township, is drilling around 2,000 feet. Frank L. Maire's No. 1 Wilson Estate, NE SE NE, Section 12, Gilmore Township, is around 3,415 feet. Apacha Oil Co.'s No. 1 Frank Epple farm, SE SE NE, Section 20, Denver Township. is drilling around 1,500 feet. Deerfield Nottawa Oil & Gas Co.'s No. 1 Smith-Tillman farm, SW SE NE, Section 15, Deerfield Township, is shut down at 1,160 feet.

Midland County

W. L. McClanahan's No. 1 W. S. Root, NW NE SW, Section 12, Greendale Township, is drilling in the Dundee formation. Same party's No. 1 Corning Estate, SE SW SW, Section 2, same township, is drilling in the Dundee formation. Same party's No. 2 Henry Morrison farm, NW SE SE, Section 10, same township, is drilling around 1,500 feet. No. 3, same farm, SE SW SE, Section 10, is around 1,600 feet and No. 4, same farm, is drilling at 2,200 feet. Same party's No. 5 A. G. Struble farm, SE NE SW, Section 10, same township, is spudding, and No. 1 Hughes farm, SW NE NE, Section 20, Geneva Township, Midland County, is spudding.

Pure Oil Co.'s No. 1 Pringle heirs farm, SW NW, Section 14, Greendale Township, is fishing at 1,700 feet. Same company's No. 1 Emma O. Reed farm, SW NW SE, Section 10, Greendale Township, is down about 2,500 feet. Same company's No. 2 Emma O. Reed, same section, is at 1,000 feet, and No. 3, same farm, at 1,100 feet. Same company's No. 3-B Bernard farm, SW NW SW, Section 15, is drilling. Same company's No. 2-A Iosco Land Co., NW NW, Section 16, is rigging up. Same company's No. 2 Mullett farm, NE NW NE, Section 15, same township, is drilling at 1,300 feet, and No. 3, same farm, NW NE NE, Section 15, same township, is at 800 feet.

Wellman Oil Co.'s No. 1 John Bolen farm, plugged at 1,250 feet, to skid rig, in Greendale Township. Bertha Jones' No. 1 Jones-Woodruff farm, Greendale Township, is shut down at 1,200 feet. Atha Drilling Co.'s No. 1 Chemical State Bank, SW SE, Section 21, Ingersoll Township, has rig building. Hanner, Renner and Jones' No. 1 Peninsula Oil Co., Section 4, Greendale Township, is drilling at 1,200 feet. Edward B. Strom's No. 1 Newland farm, SW SE, Section 19, Lee Township, Midland County, is shut down at 500 feet. Columbia Oil & Gas Co.'s No. 5 Hornick farm, NW NW SE, Section 15, Greendale Township, is skidding rig and starting a new hole. Fred Sias' No. 1 Merryfield-Nelson, Section 17, Jerome Township, is drilling at 1,200 feet. Michigan Oil & Gas Co.'s No. 1 Raynor farm, SW SW NE, Section 12, Greendale Township, is rigging up. T. K. Buzzard's No. 1 Henry Simms farm, NE SE and east of NW SE, Section 4, Mount Haley Township, is drilling at 1,400 feet. H. J. Conover's No. 1 Remenschneider farm, NW SW NE, Section 14, Greendale Township, is shut down at 375 feet. Talbot Oil Co.'s No. 1 State of Michigan land, SW SW SE, Section 11, Greendale Township, has been abandoned in the Marshall from a bad fishing job, to skid the rig to a new location. Same company's No. 1-C State, SW SE SE, Section 10, Greendale Township, is drilling around 1,600 feet. Same company's No. 2-C State, NW SE SE, Section 10, is rigging up to start spudding.

Clare County

W. J. Sovereign's No. 1 Pere Marquette right of way, SW NE NW, Section 6, Grant Township, is at 1,400 feet.

CALIFORNIA FIELDS

(Continued from Page 35)

the field. The only point of interest in the Long Beach Field centers in a small area west of American Avenue near Wardlow and Pacific Avenues where several fairly successful wells have been finished during the past few months. The Hancock Oil Co.'s No. 21, in this area, staged a short blowout during the early part of the past week and began flowing through the 8⅝-inch casing following a perforation job at 5,225-62 feet. The Wilshire Annex Oil Co. almost killed its No. 1 Gun Club in the Potrero Field due to lost circulation from drilling mud used in No. 2. The rotary fluid from the latter project broke into No. 1, which has been flowing approximately 150 bbls. per day for the past several months, and the cut jumped to 85 per cent before the pressure was released on No. 2.

CENTRAL WEST FIELDS

(Continued from Page 46)

dry hole on the H. L. Gaston farm, Section 19, Washington Township, Gibson County. Wabash Public Service Co. is drilling a second test on the G. B. Allen farm, NE Section 22, Columbia Township, same county.

ILLINOIS

The wildcat of R. Linkenfelder in the northwest corner of the M. J. and J. A. Shaw farm, NE Section 13, Lamotte Township, Crawford County, was dry at a depth of 1,300 feet. Riehard and others are drilling on the H. Klais farm, Section 8, Waid Township, same county. In Montgomery Township, W. C. McBride, Inc.'s No. 2 W. F. Wesner farm, Section 4, produced 15 bbls. initially.

In Lawrence County, Petty Township, the Ohio Oil Co. abandoned No. 7 Albert Westall farm, Section 12; also abandoned No. 11 Rebecca Gould farm, SE Section 23, Dennison Township. Big Four Oil & Gas Co. abandoned No. 30 E. J. Seed farm, Section 22, same township; also pulled out No. 2 Ellen Lutz farm, No. 2, in Section 20, Bridgeport Township.

Amnyers and others are drilling on the R. Endsley farm, Section 32, Westfield Township, Clark County.

KENTUCKY

The deal made by H. Z. Clark and associates for the oil and gas holdings of L. C. Young and others, in Hart County, in western or central Kentucky, means much for that part of the state and with an advance in the price of crude, will bring about active development work for both oil and gas in Hart and adjoining counties during the current year. Mr. Clark for a long period was operating in northern Tennessee. Those interested in the purchase of the L. C. Young holdings are H. Z. Clark, Horse Cave, Ky.; Thomas Wittmer, of Pittsburgh, Pa.; W. K. Snyder, of Horse Cave, and Mrs. Anna K. Wilson, of Bowling Green, Ky. The deal involved 1,266 acres of oil and gas leases in Hart County, with 35 oil wells and 3 gas wells, with an estimated production of 1,750 bbls. of oil and 2,000,000 feet of gas, the price announced to be around $350,000.

Several oil operators from the Hart and Barren County Fields were in conference with the refineries in Louisville during the past week to endeavor to have oil from this part of Kentucky placed upon the Mid-Continent basis of price at the wells.

A few completions were made in Kentucky recently, but none of them large. In Hart County, in the Bonneville area, unknown parties' test on the Sonnie Baumgardner farm is reported around 50 bbls. initially.

In Daviess County, Owensboro district, the Mecca Oil Co.'s No. 4 J. C. and M. Alsip farm, in the Jones Pool, is rated at 30 bbls. initial, and the same company reported a dry hole 210 feet from the south line and 400 from the west line of the Julia Johnson farm, in the Cane Run area, at a depth of 781 feet.

In the Greenville Field of Muhlenberg County, Ellis & Young's test on the L. Cornette farm, is reported with an initial of 15 bbls. at a total depth of 1,400 feet.

In Edmonson County, three wells were reported completed by I. M. Murphy in the Rock Hill area, in the extreme southern part of the county, Nos. 1 and 3 rated at 20 bbls. each and No. 2 at 15 bbls.

The Bonneville area, in the northwestern portion of Hart County, is in for an active drilling campaign, owing to the good gas and oil wells being found there as well as in the Logsdon Valley area which is a few miles southwest from Munfordville, the county seat. The test on the Widow Johnson farm, in the Bonneville area, is said to be one of the largest gas wells so far found in the county, rated with about 3,000,000 feet. The well drilled by Deweese and others on the A. L. Finley farm, is rated at 2,500,000 feet. Same party is drilling deeper No. 1 on the Albert Hodges farm, which came in a nice gas well, but is making an effort to get oil. The test on the L. G. Finley farm is showing 3,000,000 feet of gas. Creech and others are drilling on the Jess Craddock farm; also No. 1 on the Dave Logsdon farm. Farmer and others are drilling No. 1 Mrs. Felia Wilson farm. Oliver Jenkins is starting No. 1 on the Elza Sanders farm, all in the same area.

Producers Association

At a meeting of the oil producers of Hart County, held at the Hotel Spotswood, an association was formed and named the Hart County Oil Producers Association, for the purpose of directing activities in the Legrande Field. Winn Davis was elected president and Paul Bushong secretary.

Members of the association, which includes 90 per cent of the oil producers of the Legrande Pool, unanimously passed a resolution to close down all activities in the Legrande Field until the market conditions would permit buyers to pay Mid-Continent prices for Hart County crude. The shutdown went into effect at once. On motion of the members, a letter was endorsed and sent to the refiners, stating that in view of the fact that the field had been operating for some time at a loss and could not continue to operate at the present prices, the producers were putting a complete shutdown into effect until the market would justify Mid-Continent prices.

The association instructed the committee that was appointed to carry out the agreement that first consideration was to be given to the pipe lines which had been built into the field by the Producers Pipe Line Co., Oil Operators and Stoll, and that only after having given these pipe lines every consideration in securing a market based on Mid-Continent gravity scale, were other buyers to be considered. But, in case these pipe lines fail to secure a market based on the Mid-Continent scale, then the committee is to consider proposals from other buyers who have been seeking to produce oil at a price based on the Mid-Continent gravity scale.

EASTERN FIELDS

(Continued from Page 46)

reached 1,185 feet on the C. S. Reed farm, in Williams district. In Walker district, Alleman and Horner reached 590 feet on the E. P. Linger farm and shut down, and in the same district Hugh Prather shut down at 500 feet on his own property. In Lubeck district, the deep test of W. H. Bickel on his own property, which had a light showing of gas in the Niagara lime at 4,390 feet, is in trouble with a fishing job for the bailer lost in the hole.

In Wayne County Meabohn and Huffman reached 2,815 feet in drilling deeper their old No. 1 on the Mary E. Pratt farm in Stonewall district and will try a shot at that level. In Union district the Southern West Virginia Oil & Gas Co. have made a location on the A. W. Preston farm. Gilmer County remains inactive with no drilling wells reported and but two rigs standing.

In Monongalia County the West Penn Gas Corp. has reached 3,416 feet on the Charlie Taylor farm, which is being drilled deeper and will soon be in the Bayard sand. This test is in Battelle district, and in the same district. This company remains shut down at 2,570 feet on the Kimble Wood farm. In Clay district the Pedlar Run Oil & Gas Co. stay shut down at 2,570 feet on the Lewis R. Hess farm.

In Hancock County Charles Spraggs is drilling on the W. L. Smith farm in Clay district and has reached 2,490 feet. In Grant district the R. J. Braden Co. is cleaning out old wells and drilling deeper. Their No. 11 on the J. C. Hamilton farm is down 650 feet, and their No. 12 has had the plug drilled out and is at 250 feet.

In Cabell County the Madison Gas Co. is drilling on the Ira Taylor farm in Guyandotte district and has reached 400 feet. In the same district, Wilson and Mowery have reached 1,000 feet in a second test on the Hans-Watts Realty Co. lease.

SOUTHWEST PENNSYLVANIA

There was no new production reported in Southwest Pennsylvania. In Allegheny County Eph Morrow and others drilled a test on the W. W. Morgan farm in Richland Township in the 100-foot sand and it proved to be a dry hole.

Among the new work for the spring is listed a test on the R. G. Clark farm in Cromwell Township, Washington County, by A. G. Clark & Co. It is rigging up to drill. In the same township Willard Iams & Co. is rigging up to drill a test on the Willard Iams farm.

LYNN HOLBROOK DIES

OIL CITY, Pa., Apr. 2.—Lynn Holbrook, 47, purchasing agent for the National Transit Pump & Machine Co., and well known throughout this section and in industrial circles of the East, died at the Oil City Hospital after a short illness of pneumonia.

A. S. REYNOLDS DIES

Alfred S. Reynolds, an official of the Standard Oil Co. branch in China, died of pneumonia in Tienstein as he was about to depart for a furlough at his home in Rochester, N. Y.

Increased Jobber Buying in Chicago

Buyers Feeling Somewhat Nervous in View of Last Year's Experience but Fundamental Factors Are More Favorable Now

By Robert C. Conine
Chicago Bureau, The Oil and Gas Journal, 6 North Michigan Ave.

CHICAGO, Apr. 4.—The arrival of real spring weather in Chicago district is serving to dispel some of the doubts which have been causing refiners and marketers alike to discount the constructive factors which have raised the level of the gasoline, naphtha and kerosene markets from half a cent to a full cent in a period of little more than two weeks.

The delay by Standard Oil Co. (Indiana) in meeting the crude oil price advance made effective April 1, in the Mid-Continent and Texas fields by Magnolia, Continental, Sinclair and other purchasers, has been interpreted variously in Chicago district oil trade circles. The most popular view is to the effect that the Standard company feels that a general tank wagon and service station advance must follow a boost in the price of crude oil, and that such an advance in the gasoline retail markets is not advantageous at this time because of widespread activity of service station price cutters.

One of the most harassing developments with which the major companies are now contending is an outgrowth of the comparatively large quantity discount agreement spreads in force at numerous points. At many franchise stations in the territory the intermediary or jobber has taken marketing policies into his own hands and has allowed reductions in the regular grade to meet competition. Although the reduction figures as a loss in profit to the jobber the situation is one that discourages the view that the advent of favorable motoring weather is in itself sufficient to justify a general upward revision of tank wagon and service station postings.

Marketers are reporting a considerable increase in jobber buying, and while the volume of movement is on contracts a material increase is noted in the open markets. At this time, naturally, buyers are feeling somewhat nervous as the result of the experiences of last year, but as a whole it seems to be agreed that the fundamental factors operating in the current marketing situation are much more tangible and favorable than those of any period in the long siege of unfavorable marketing conditions. In Chicago district, as elsewhere, there are a number of adverse circumstances which must be cleared up before the gasoline tank car markets may be considered well on the road to recovery. One of these pertains to differential shipping from Pennsylvania and Kentucky refining points; another is in connection with blended motor fuels in competition with gasoline, and a third is the problem of gasoline tax evasion and the premium policy. Cheering news comes from the South. Information received here is to the effect that major companies have advanced service station and tank wagon postings throughout the State of Georgia an average of 1.5 cents. It is also said that similar advances are scheduled elsewhere in the territories of Standard Oil Co. of Kentucky, and Standard Oil Co. of Louisiana.

Gasolines Advance Strongly

In Chicago district oil trade circles the current advance in the gasoline, kerosene and naphtha markets is held to have a number of supports which have been lacking in past betterments. The advance in the crude oil markets, obviously, is the foremost consideration, especially in view of the fact the further advances are looked upon as practically a foregone conclusion. In fact, it is said that when Kentucky postings were advanced 15 cents the producers were disappointed as they had expected a 25-cent boost. Another constructive factor, and one upon which most of the minor operators are relying, centers on the financial reports which have been disclosing the huge losses the refiners have sustained during the reign of price cutting and mania for more gallonage. A third year of dipping into reserves is unthinkable, and the way to prevent losses is to make every transaction pay and eliminate business which merely means gallonage.

While the spot markets are manifesting unusual strength, it will not do to overlook the fact that it will take some time to straighten out the kinks made in the Chicago district situation by contracts which have sacrificed profits to larger volume of sales. It is estimated that about 60 contracts are in force in the district which allow the buyer a marginal spread of 6 cents below the service station price. Some of the most damaging agreements permit the buyer to take material, ranging in volume up to 10,000,000 gallons a year, at from a quarter of a cent to three-eighths of a cent below the low of published quotations. One refiner is offering 60-62, 400 endpoint gasoline of 58-60 octane number over the month at the low of the 58-60 U. S. Motor of no octane specifications.

Direct Selling

Another development, which, however, is not expected to be long-lived, is that of direct selling on the part of several refiners who have up to this time relied upon the services of marketers. One of these, operating a plant in Oklahoma, has added 12 salesmen and is offering the trade the same prices allowed the marketers; the other, operating a plant in the East Texas area, is planning to add to its sales forces and is using the information garnered while dealing with Chicago marketers to reach the trade with similar price inducement. Naturally, the marketers are taking a keen interest in this new policy, and one of them sent a man to Oklahoma to figure the cost to one of these refiners of selling a gallon of gasoline direct to the trade. The expense of a staff of 12 salesmen, the marketer concluded, comes to 1 cent per gallon, and his comment was, "and to think that we've been satisfied with an eighth of a cent."

The blended motor fuel problem is an important one. Blenders are able to tell their jobbers that they can save them as much as $140 per tank car. The gasolines of five major refiners operating in the territory were described in these columns last week, and the following are the characteristics, obtained under the same conditions, of a blended motor fuel offered by a Chicago marketer: Octane number, 66.9 (Series 30 Ethyl); gravity, 66-67; color, plus 27; recovery, 98 per cent; residue, 0.9; loss, 1.1; initial, 93°; 5 per cent, 113°; 10 per cent, 125°; 20 per cent, 147°; 30 per cent, 172°; 40 per cent, 198°; 50 per cent, 227°; 60 per cent, 255°; 70 per cent, 282°; 80 per cent, 319°; 90 per cent, 355°; 95 per cent, 373°, and endpoint 397°. The marketer says that he can easily supply 200 cars per month of this material.

Refiners are still finding considerable competition from materials shipped from points in Kentucky and Pennsylvania. However, the indications are that tank car prices will be advanced shortly in those districts, and it is reported that most of the gasoline has been picked up. It is pointed out that when the price f.o.b. Pennsylvania refinery is 4.5 cents the cost of the gasoline delivered in Detroit and the Group 3 comparison is as follows: Cost at plant, 4.5 cents; freight to Detroit, 1.75 cents; total, 6.25 cents; basis Group 3, 3.83 freight, 2.42 cents. For movement to Grand Rapids: Cost, 4.5 cents; freight, 2 cents; total, 6.5 cents; Group 3 freight, 3.55 cents; Group 3 price, 2.95 cents. The movement of Kentucky gasoline is not so favorable but has an advantage over the Group. Cost f.o.b. Kentucky refinery, 5.125 cents; freight to Detroit, 2 cents; total, 7.125 cents; Group 3 freight, 3.83 cents; Group 3 price, 3.29 cents.

Few Refiners Sell Ahead

Most of the refiners operating in the district are reluctant to sell more than a week ahead. One refiner "guessed wrong" to the extent of at least 100 cars of U. S. Motor gasoline which he sold at 3⅜ cents when the buyers were slow at the 3⅝-cent level and he interpreted the marketers' hesitancy to indicate an impending price slump.

Naphthas and Kerosenes Advance

The naphtha and kerosene markets are reflecting the strength in the gasoline markets and more consideration is being given to their undoubtedly good statistical position. With the exception of rubber solvent, in which keen competitive conditions brought a pronounced drop in price, and the petroleum thinner, which business is practically out of the way on contracts, the naphtha markets moved up for the third time in three weeks. Kerosenes are reported in good movement to the jobbing trade, and it is expected that a few more days of sunshine will see the farm equipment out in full force to make up for the time which has been lost through wet weather.

Cracking Heavy Distillates

Several of the larger refiners have decided that there is no point to selling 32-36 straw and down to 32-36 industrial gas oil at the prices ruling up to last week, and have practically withdrawn from the market by moving their quotations from a quarter to three-eighths of a cent on these materials. One of the largest operators, Shell Petroleum Corp., is one of these refiners and is one of the largest tank car sellers of gas oils and distillates in the district. "Why should we sell material which we can crack and get 70 per cent of good antiknock gasoline from while gas oil prices hover around a cent," one official said.

That there has been a steady increase in cracking operations in the district is indicated in the reported advance of 54,000 bbls. between March 12 and March 19, and a further increase of 44,000 bbls. between March 19 and March 26. Unless all of the indications are completely false, reports closing the first week of this month should show another material increase.

Heavy Fuels and Coke

The heavy fuels and coke have been expected to show some response to the coal strike affecting this district. However, a survey of the yards of some of the major coal users reveals that considerable preparations have been made to face a possible shortage of the mined fuel. The fuel oils have not weakened in price in spite of the curtailed movement, and there is apparently no pressure bearing on these materials. Petroleum coke, on the figures of one large refiner, has suffered because of mild weather. The cold spell in March, which was the longest sustained effort of the weatherman, was reflected in the sale of 240 cars of coke by this company, which represented an increase over February of 32 cars. The estimate for April is 100 cars. The figures for 1931 show that the lowest sales were in June when 70 cars were moved.

Gasoline Tank Car Markets

The gasoline tank car markets, in spite of the expressed fears from many quarters that the movement is too rapid, have continued to advance in the face of unsettling conditions. The various considerations operating in this field have been discussed. With the price of U. S. Motor advanced from a range of 3¾ to 4 cents to a range of 4⅛ to 4⅜ cents Monday, the increased jobber buying activity explains the nervousness of the marketers. The weather is responsible for increased gasoline consumption and the sources of "distress gasoline" have apparently vanished. So, the question is, shall the marketer commit himself on the terms now offered by the strongly entrenched refiners? Or shall he take a chance on the often illustrated greed of certain small refiners and just get by until the gasoline starts pouring in? Right now a magnanimous offer on the part of a refiner is the average of published quotations, although there is one refiner, at least who "makes" his own spot market and allows it to register the fluctuations of the published quotations. The refiners, it is presumed from the expressions of half a score in the district, are not at all agitated. In fact most of them say that the only thing they are wondering about is whether a major company will wait until the middle of this month before announcing a general tank wagon and service station advance.

More emphasis is being placed upon octane ratings and while there is still a differential of three-eighths of a cent between the low octane and the middle octane, and a half cent spread between the low and the high octane gasolines, it is explained that the gap in prices will be widened somewhat. The 60-62 400 endpoint gasoline advanced to a range of 4¼ to 4½ cents; 64-66 375 endpoint gasoline is not moving to any great extent and the price reflects its superior antiknock value. This gasoline is quoted at 4½ to 4¾ cents. The 68-70 360 endpoint gasoline likewise advanced and the new range is 4¾ to 5 cents. Aviation gasoline moved sympathetically and rules at 5½ to 5¾ cents.

Naphtha Tank Car Markets

While rubber solvents showed the effects of overzealousness on the part of a large marketer to complete an important sale in the Akron district, advances were registered in the naphthas with the exception of the petroleum thinner and the heavier petroleum spirits which remained stationary. Rubber solvent was reduced from a range of 6¼ and 6⅝ cents, to the unusually low level of 5 to 6 cents. Blending naphtha, 50-52 gravity, 450° endpoint, is reported scarce and the price has advanced half a cent to a range of 3⅞ to 4⅛ cents. Another blending naphtha with a 330° endpoint, is offered at a low of 4 cents. Cleaners' naphtha advanced another quarter of a cent making the new postings 6¼ to 6½ cents. Lacquer diluents moved up an eighth of a cent on both grades making the new prices 9¼ to 9½ cents for each. Stoddard solvent advanced a quarter of a cent to 5½ and 5¾ cents. V.M.P. naphtha moved up an eighth of a cent to a range of 5¾ to 6 cents.

Kerosene Tank Car Markets

As already mentioned, the refiners have come to the conclusion that kerosene quotations have been too low and their refusal to sell at those prices is reflected in the advances recorded Monday. The 41-43 water white kerosene moved from a range of 2¾ to 3 cents to a range of 3⅛ to 3¼ cents. The 42-44 water white

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East Coast Markets Still Trending Up

Gasoline Strong as Seasonal Upswing in Consumption Develops. Fuel Oil Advanced at Philadelphia. Export Market Slow

By A. E. Mockler
New York Bureau, The Oil and Gas Journal

NEW YORK, Apr. 4.—East Coast refined products markets have definitely turned the corner, according to opinion in oil circles here, and the outlook for the remainder of the year has brightened visibly. The statistical position of the market has undergone a definite change for the better, but leading interests in the industry in the East are inclined to pace the market slowly and consolidate each price advance before attempting further mark-ups.

Weather conditions throughout the East underwent a decided change for the better during the past week, and sunny skies were reflected in increased gallonage in both the refinery and tank wagon markets. Several price advances in tank wagon and service station prices developed during the period, and the general price structure in retail markets appears to be firming up.

The appearance of the new Ford 8 in motor display rooms during the week, coupled with the nation-wide exhibits undertaken by General Motors, has revived interest in the outlook for increasing consumption of motor fuel of high antiknock rating as the newer types of motors come into general use. Ethyl Gasoline Corp. and its refiner-licencees are seizing upon the attention thus focused on the motor fuel situation by undertaking a co-operative national campaign of advertising and publicity, scheduled for the latter part of the month, to inform the motoring public of the step-up in the standard of Ethyl Gasolines, and it is expected that large integrated companies featuring their own brands of motor fuel of high octane number will similarly accelerate their advertising activities.

An interesting development of the week was the advance of 5 cents per barrel in the price of bunker fuel oil at the port of Philadelphia, initiated by Atlantic Refining Co. and followed by other large sellers at that port. This advance puts the Philadelphia posted price at 70 cents per barrel at refinery terminals, 5 cents over the prevailing price at other Atlantic Coast ports. Of still greater significance to the industry is the fact that this decided strength has occurred in the Philadelphia market, which until a comparatively few weeks ago was the weakest bunker oil market on the seaboard, and the scene of more or less constant "price wars" on bunkering sales. While major refiners bunkering at other ports along the coast have not yet met the Philadelphia advance, the situation is being closely watched, and as soon as it becomes apparent that the Philadelphia price will be maintained it is expected that a 70-cent quotation on bunker "C" oil will be established at other ports on the Atlantic Seaboard. Rumors of impending action along this line by Standard of New Jersey, Gulf, and other major factors have been in circulation in the trade for the past several days, and it seems to be generally accepted that a general mark-up to the 70-cent level is slated for the immediate future.

The upward price movement on refined products in the domestic market has reacted against the Gulf export market, and inquiries which had been received from abroad have been withdrawn in several instances. If the export market follows the domestic price trend, it is expected, Gulf sellers will lose still more foreign business on gasoline and kerosene to their competitors in Rumania and Russia, unless the latter likewise revise their price schedules upward. Rumania is known to be desirous of working its export quotations to a higher basis, due to the unprofitable price levels prevailing in that country, but Russia remains the unknown, and possibly deciding factor.

Both Mexican and Venezuelan crude oil quotations have been marked up—the former to 53 cents per barrel and the latter to 50 cents, but there has been practically no spot activity reported. This is due to the fact that the principal sellers are now engaged in loading as much oil as possible for shipment to the United States before any import duty can be imposed, and thus are unable to furnish outside buyers with any loading facilities at their shipping terminals until after the close of April.

Refinery Gasoline

Tank car gasoline markets are holding strong at recently-revised price levels, and a bullish undertone is evident at most points in the territory. Price competition in the Boston area, where considerable price cutting has been done during recent weeks, has died down considerably, and leading sellers are holding steady at posted levels.

The wholesale market in the New York harbor district is on a healthy basis, and sellers are holding firm at listed prices, which are 5¾ to 6 cents per gallon for U. S. Motor gasoline under 65 octane and 6 to 6½ cents per gallon for U. S. Motor gasoline of 65 octane or better. Warmer weather has stimulated the demand for the lower-priced product somewhat, although refiners continue to concentrate their sales promotion work on the high antiknock product.

Conditions in refinery markets at other points of the seaboard have undergone no important modification during the week, quotations remaining steady at posted levels.

A definite improvement in sentiment among distributors in the East has made itself apparent during the week, and jobbers in most instances are now keeping their storage full with additional supplies "rolling" in anticipation of an early increase in price. The higher crude oil market in the Mid-Continent, coupled with advancing gasoline prices in that area, have developed a decidedly bullish feeling with respect to the near-term outlook for the gasoline market.

Buyers in the cargo market are being confronted with steadily stiffening markets at the Gulf and in California. Ordinary U. S. Motor gasoline for shipment to the East Coast from the Gulf is quoted firm at 4½ cents per gallon, with 65 octane or over motor fuel generally held at 5¼ cents per gallon. California U. S. Motor in cargo lots for shipment East is firm at 4½ cents per gallon.

With navigation in the St. Lawrence opening up, it is not expected that any further shipments of Rumanian gasoline will be sent into Baltimore, but that further cargoes will go to Montreal, for transshipment by water to the Detroit distributor of the Rumanian product.

Tank Wagon Gasoline

The upward trend in tank wagon and service station gasoline prices continued in the East Coast territory. Effective March 28, Standard Oil Co. of New Jersey announced an advance of 1 cent per gallon in tank wagon and service station prices throughout Delaware. On the same date Standard Oil Co. of Pennsylvania advanced service station quotations 1 cent per gallon throughout Pennsylvania, with the exception of Philadelphia. Effective March 29 leading marketers advanced service station prices 2 cents per gallon at Springfield, Mass., putting the retail market at 17 cents per gallon for the regular grades and 20 cents per gallon for premium motor fuels. This action brought to an end a price-cutting campaign which had waged for some time.

In other parts of the territory principal marketers are steadily working up their retail quotations to posted levels. In New York City, for example, brands which were available a week or so ago at 7 and 8 gallons for $1 at filling stations are now quoted at a flat 15 or 16 cents per gallon, and gallonage does not appear to have suffered any from the change.

The question of margins on gasoline sales, it is understood, is coming in for considerable attention on the part of large companies in the East. It appears to be generally felt that the present spread is too great, but owing to the delicacy of the competitive situation, each company hesitates to take the lead in any narrowing of the margin, and this phase of the marketing situation, upon which the profitable operation of the industry acknowledgedly hinges, is still waiting for some Moses to arise and lead the remainder of the industry out of the wilderness of uneconomic marketing practices.

Kerosene

Milder weather does not appear to have reacted any against gallonage in the refinery kerosene market during the past week, and tank car shipments continued heavy. Quoted prices for 41-43 water white in tank car lots continue to range 5¼ to 5½ cents per gallon, the latter being the posted level. With the price trend upward on other products, it is expected that tank car kerosene will be moved up to the posted level in time for the spring demand.

Tank wagon kerosene gallonage has been well maintained during the period under review, and there have been no general revisions in the price schedule made during the week.

Gas Oil

With the heavy oil market showing general firmness, refiners have moved up selling prices on 28 plus recycled gas oil, and spot sales in the tank car market are again being made at the posted level of 4 cents per gallon. Material which up to a week or so ago appeared fairly plentiful at 3½ cents and under has disappeared from the market, with the advent of higher prices for other grades of heavy oil.

A number of refiners have booked substantial quantities of gas oil business on annual contracts for 1932, guaranteeing their buyers a "top" price of 3½ cents per gallon at refinery terminals, and sellers who were actively pressing for business at this figure at the start of the year are beginning to regret their action.

Bunker Oil

The 5-cent per barrel advance at Philadelphia, bringing the market at that point up to 70 cents per barrel, has held the spotlight in this week's bunker "C" market. The Philadelphia advance gives every indication of being sustained, and early action along similar lines at other East Coast ports is anticipated. In the meantime, however, the market continues held at the recently boosted level of 65 cents per barrel, in bulk, f.o.b. terminals.

Steamship operators, who this week again reduced their passenger rates by 20 per cent, bringing transatlantic travel down to 1914 price levels, are watching developments in the fuel oil situation with considerable concern. The general impression in shipping circles appears to be that further price advances on bunker oil are in sight, and some operators appear to feel that the "tops" mentioned in their 1932 contracts may be reached—which is bad news for steamship operators, but pleasant tidings for the refiners.

Diesel Oil

The Diesel oil market has not yet reflected the recent advance in bunker "C" quotations, and the advance in Diesel oil prices for domestic deliveries, but the undertone is decidedly strong, and an early mark-up of at least 10 cents per barrel would not come entirely as a surprise to the industry, particularly of the trend toward higher domestic crude quotations continues.

Refiners continue to post $1.30 per barrel for 28-30 Diesel oil, in bulk, f.o.b. refinery terminals and report that gallonage during the week has been well maintained.

Industrial demand for Diesel oil has continued along routine lines during the past week, with prices on a firm basis.

Furnace Oil

Retail furnace oil quotations have not reflected the recent advance in refinery prices, largely due to the fact that distributors in most instances are covered by contracts on their season's requirements.

Distributors, however, continue to defer the naming of contract prices for retail deliveries for the 1932-33 heating season. It is generally felt that next season's prices will be higher, the only question remaining being just how much of an advance will be necessary—or wise

Paraffin Wax

Improved domestic demand for paraffin wax brought a more cheerful feeling into the market last week, and the market undertone stiffened somewhat, although no actual upward price revisions were put into effect during the period. The higher melting points continued to have the call, and refiners were talking fractional price advances for the near future.

Export buying of wax appeared to be lagging somewhat. Great Britain made exceptionally heavy purchases of crude scale during the first quarter of the year, and demand from that source has been tapering off somewhat during the past fortnight. Other foreign buyers appear to be deferring action until the situation with respect to domestic prices in this country is further clarified.

Petrolatum

Routine activity was reported in the spot market during the past week, and prices remained without change, although the market undertone was showing some tendency to work fractionally higher on the white grades.

Contract withdrawals on the part of domestic buyers were reported to be improving in quantity, and sellers were likewise looking for an upturn in spot activity. Export inquiry, however, continued along routine lines, and new business for shipment abroad was generally limited to small lots for prompt delivery.

Lubs

Domestic buyers, who had been fairly active in the market during the first three weeks in March, have tapered off their operations somewhat, and activity on the spot position was rather limited last week. There is a general feeling that additional large-scale buying will be withheld until sellers of compounded oils have an opportunity to test out the price structure for the coming motoring season. Retail sales of branded lubs at 2 gallons for $1 and less in 8-quart cans are by no means infrequent, and a continuance of these low retail prices is expected to militate against the possibility of any real sustained advance in the refinery price basis.

There were no price changes recorded

in spot lub oils during the week, although a firm undertone continued in evidence, reflecting strength at the refineries.

Gulf Export Market

There were no changes reported in export prices at the Gulf during the week, the market still being largely in nominal position. A few cargo and mixed inquiries which had come into the market were withdrawn, due to the uncertainty of the price structure, it was understood.

Rumania continues to get considerable business on gasoline which normally would reach Gulf sellers, and Rumanian price competition is still very much of a factor. Mail advices from Constanza give the following price basis on export oils as of March 17: Gasoline, 730 gravity, $15.55 per ton; gasoline, heavy, $10.69 per ton; lamp oil, $6.32 per ton; white spirit, first grade, $8.80 per ton; white spirit, second grade, $7.41 per ton; gas oil, $5.30 per ton; fuel oil, $3.58 per ton.

No steps have been taken thus far to revive the export association made up of the major American integrated companies. The revised plan for stabilization of world oil markets recently announced by J. B. Aug. Kessler, managing director of the Royal Dutch Co., contemplated the revival of the American export association as the medium through which the American petroleum industry would co-operate with other world producers in stabilizing refined products markets. Consideration of the Kessler plan, necessarily, has been delayed pending the outcome of the American oil tariff proposals. The export association has been continued as a corporate body, pending such time as the dominant interests in that group may decide to resume active operations or to disband the organization entirely. Any resumption of operations, however, would be depended upon the broadening of the association's scope to take in the rank and file of American refiners, it is generally believed in market circles.

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended March 26 totaled 1,766,000 bbls., a daily average of 252,286 bbls., against 1,766,000 bbls., a daily average of 252,286 bbls. for the previous week, and a daily average of 259,679 bbls. for the four weeks ended March 26. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast Ports—	
Baltimore	*136,000
New York	1,058,000
Philadelphia	143,000
Others	30,000
Total	1,367,000
Daily average	195,286
At Gulf Coast Ports—	
Galveston district	61,000
New Orleans and Baton Rouge	338,000
Total	399,000
Daily average	57,000
At all United States Ports—	
Total	1,766,000
Daily average	252,286
Daily average four weeks	259,679

*Of this total, 55,000 bbls. of gasoline were imported on the Norwegian tanker "Ralla" from Constanza, Rumania.

Distribution of total imports is as follows:

Crude	1,006,000
Gasoline	135,000
Gas oil	56,000
Fuel oil	569,000

California Oil Receipts

There were no receipts of California crude or refined petroleum during the week ended March 26. Receipts during the previous week were 75,000 bbls., a daily average of 10,714 bbls., and for the four weeks ended March 26 averaged but 6,714 bbls. per day.

Two cargoes of California refined products were reported cleared for the East Coast during the week, as follows:

For Philadelphia, 115,000 bbls. of gasoline on the tanker Sun (Sun Oil Co.).

For Baltimore, 46,300 bbls. of gas oil on the Manatawny.

Petroleum Exports

Export movement of a number of refined products showed improvement locally during the week ended March 26, lubricating oil volume being increased substantially by shipments of more than 1,600,000 gallons on the German tanker Max Albrecht, consigned to various European ports.

The following table shows refined petroleum exports from the port of New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended Mar. 26	Mar. 19	Mar. 12
Gasoline	205,000	8,000	66,000
Naphtha	255,000	310,000	510,000
Kerosene	32,000	15,000	45,000
Fuel oil	275,000	14,000	2,000
Lubricating oil	2,600,000	535,000	600,000
Petroleum, ref'd.	352,000	165,000	690,000
	Pounds		
Petrolatum	12,000	485,000	50,000
Paraffin wax	1,135,000	2,010,000	1,850,000
Refined	120,000	.....	.....
Scale	980,000	135,000	515,000
Lub. grease	860,000	475,000	890,000

The advance announcement of the April 1 advance in posted prices for crude oil brought about a marked increase in export inquiries for refined products, and spot sales were stimulated considerably by the general anticipation of a further upward revision in refined products quotations, following the effective date of the crude mark-up. Reports among local operators indicate that foreign distributors are carrying unusually small stocks of products at this time, and while continued hand-to-mouth buying for export is anticipated, operators look for a well sustained movement of small quantities.

SOUTHWEST TEXAS FIELDS

(Continued from Page 36)

in Survey 730. The Sun Co.'s test was drilled on the idea of picking up an extension production of the Humble Oil & Refining Co.'s five producing oil wells in the Reiter-Foster Pool, 2 miles to the northeast, production coming from around 2,800 feet.

The Sun test completed to 3,010 feet was a failure, but had quite a showing of oil and gas and French is moving to the northwest on the idea that he is getting farther up on the structure.

Ballard and Mercer the past week got quite a showing of gas in sand at 2,493-97 feet in No. 1 Flores in Block 27, Porcion 37, of Zapata County over near the Rio Grande and a little north of the town of Zapata. A small gas well was completed in that part of the county a few years ago at around 1,300 feet, but otherwise it is rank wildcat many miles from production. A drill stem test will be made.

In Jim Hogg County L. W. Connor's No. 1 Holbien, Block 7, Survey 7, of the Holbien Subdivision, tested sand at 1,805-46 feet. It got a little gas and a little oil but not enough to make a well and is being deepened.

Develop Slick Pool

Announcement of the location of No. 2 Allen in the Slick Pool on the DeWitt-Goliad County line, 15 miles northeast of the Pettus Field, starts development of that pool which thus far consists of two producers, each making a lot of gas and No. 1 Poetter, discovery well, making about 500 bbls. of oil. No. 1 Allen, the other producer, does not make so much oil. No. 2 Allen is 1,320 feet southwest of the No. 1 Allen and about 1,000 feet south of No. 1 Poetter. It is 330 feet from the northwest line and 1,660 feet from the northeast line of the tract in the Obid Marshall Survey.

There is to be some additional wildcatting in that district. Pat Armstrong is moving in to drill No. 1 E. T. Clark about 2,000 feet south of the Simms Oil Co. and Republic Production Co.'s No. 1 Clark in DeWitt County approximately 6 miles northeast of the Slick Pool, and J. F. Richardson is to drill a couple of miles west of the Slick Pool. Besides that there are other deals pending.

Brooks County

Two important tests are starting in Brooks County, one in the northwestern part of the county and the other in the southwestern part, two areas that held attention for months a couple of years ago. Allen & Morris of Laredo are moving in the rig to drill a deep test on a block of 2,500 acres out of the Holbien land and 1,100 out of the Lasater land in northwestern Brooks, where Houston Oil Co. a couple of years ago opened a field, the discovery well being on the Lasater land. This Allen & Morris test will probably be pretty deep. The rig is of heavy-duty type. Houston Oil Co.'s No. 1 Lasater, the discovery well, was a 40-000,000-foot gasser at 4,112 feet with 1,690 pounds pressure. Its second well completed at 3,814 feet came in for the same amount.

The other test is by Ed East in the southwestern part of the county on the Garcia land. He opened a gas field there at around 1,200 feet. Later the California Co. bought his acreage and considerably more. East is now starting another test on other acreage nearby.

Colorado County

One of the biggest deals in Southwest Texas for a wildcat test is by Coyle-Concord Oil Co. in southern Colorado County, 10 miles west of Garwood. Indications point to a salt dome. Part of the dome structure was worked out by T. L. Bailey and described in a Texas State University bulletin nine years ago. Coyle-Concord Oil Co. discovered the area, worked it out further with the use of airplane pictures, and torsion balance and by the drilling of four core tests which were completed more than a year ago.

The company acquired 20,000 acres, 5,000 of which it owns in fee and has sold off 4,700 acres to the Plymouth Oil Co. after that company had gone over the block with magnetometer. The rig to drill the test is one of the biggest ever used. It is the rig used in drilling the world's deepest producer in the Big Lake Field in Reagan County, that being the only test it was ever used on.

Coyle-Concord Oil Co. is thus equipped to drill to a maximum depth and has no contract requirements governing the depth that it will drill. It will thoroughly test the dome with this and other tests.

The dome is in the usual horseshoe shape of many domes and has attracted wide attention since it was secured by Coyle-Concord. The rig was moving in last week and the test will probably spud in this week. Colorado County is in the third tier of counties from the coast.

GULF COAST FIELDS

(Continued from Page 41)

55 bbls. an hour, 645 pounds pressure, through a three-eighths inch choke from a total depth of 5,176 feet. Two new locations also were made at Rabbs Ridge, these being Gulf and Humble's No. 2 T. R. Booth, 600 feet east of No. 1, and No. 3 Booth-Meyers, 1,500 feet east of No. 2.

Markham Extension

A possible 2,000-foot north extension to the new Markham Field on the northeast side of the dome is indicated by showings encountered in Claude Hamill and associates' No. 1 Northern Irrigation Co., 50 feet out of the SW cor. N half NW, Section 5, Block 9, I.&G.N. Survey, Matagorda County. This test has 11 feet of promising sand at a total depth 3,508 feet and on which casing has been set to test. This apparently is the same upper Miocene sand as that opened on the northeast side of the dome last July by Ellis Hamill's No. 1 Meyers. The latter is in the sand at 3,242-63 feet and has established an unusually good production record for a coastal well. Another well, Powers Production Co.'s No. 1 Meyers, 200 feet northeast of the first well, also is producing from the sand while a third, United North & South Development Co.'s No. 1 McDonald, 800 feet east, is due to make a small well in it.

On the southeast side of Markham, also semiwildcat territory, L. P. Smith and associates have completed a good well in their No. 2 Hudson, 850 feet from the east line and 1,050 feet from the south line of Block 15, Henry Parker Survey. The well set 12 feet of 4½-inch screen at 3,261 feet and came in flowing 800 bbls. of pipe line oil daily through a three-eighths inch choke with pressure of 525 pounds. Placed on a one-fourth inch choke, production settled to 400 bbls. daily. Gravity of the oil is 23.8° (corrected). At present this is the only production in that immediate vicinity although several years ago Rycade Oil Corp. and Humble Oil & Refining Co. got some small production there.

A small extension also was made on the southwest flank of the Hull Dome, Liberty County, by the completion of Eclipse Oil Co.'s No. 1 Barrow, which came in flowing 450 bbls. daily from sand at a total depth of 4,556 feet. The well is 50 feet from the north line and 31 feet from the east and west lines of a 3.7-acre strip. Daisetta and Liberty Oil Co. and Bashara Oil Co. some time ago completed a couple of good wells in the same vicinity but a little closer into the dome. The latter operators also have made location for another test, No. 1 Pevito, located 34½ feet from east line, 40½ feet from west line and 30 feet from north line of a 5-acre strip, placing the location approximately 300 feet southeast of the Eclipse well. Republic Production Co. is starting a new test, No. 63-A Dolbear, on the northwest flank of Hull. The latter, however, is in proved territory.

Barbers Hill

Additional completions of the past week included two good wells at Barbers Hill, namely: Texas Gulf Production Co.'s No. 6-H Kirby, east flank, deepened from a former producing horizon at 5,108 feet to a lower sand at a total depth of 5,225 feet; and Gulf Production Co.'s No. 7 Wilburn, in the 4,400-foot Miocene sand at 4,347-64 feet. The former, with 65 feet of 5⅞-inch screen, flowed initially at the rate of 1,700 bbls. daily, 200 pounds pressure through a three-eighths inch choke. Gulf's well set 22 feet of 5-inch screen and flowed 1,200 bbls., 295 pounds pressure, through two three-eighths inch chokes.

Leesville Producer

At Leesville, LaFourche Parish, Louisiana, The Texas Company has completed its No. 4 L.L.&E., the third producer in the field. This well, flowed initially an estimated 1,200 to 1,500 bbls. of fluid, 40 per cent water, through a one-half inch choke with 30⅛ feet of 5⅞-inch screen set at 3,745 feet. Another well, Pop Oil Co.'s No. 1 Esponge Visier, 78 feet north and 289 feet east of The Texas Company's new well, is due to be completed in the sand at 3,711-19 feet.

In Fox Extension

Among other new development to be started on the coast will be two additional tests by the United Production Corp. in the Fox extension district northeast of the Refugio Field in the lower country. Four producers already have been completed in this area, three in a 5,800-5,900-foot sand and one, in the most northerly, in a 6,400-6,500-foot sand. The new test, Nos. 4 and 5 Fox, are located between a quarter and a half mile to the west and south of that production and in a line with the main Refugio Field.

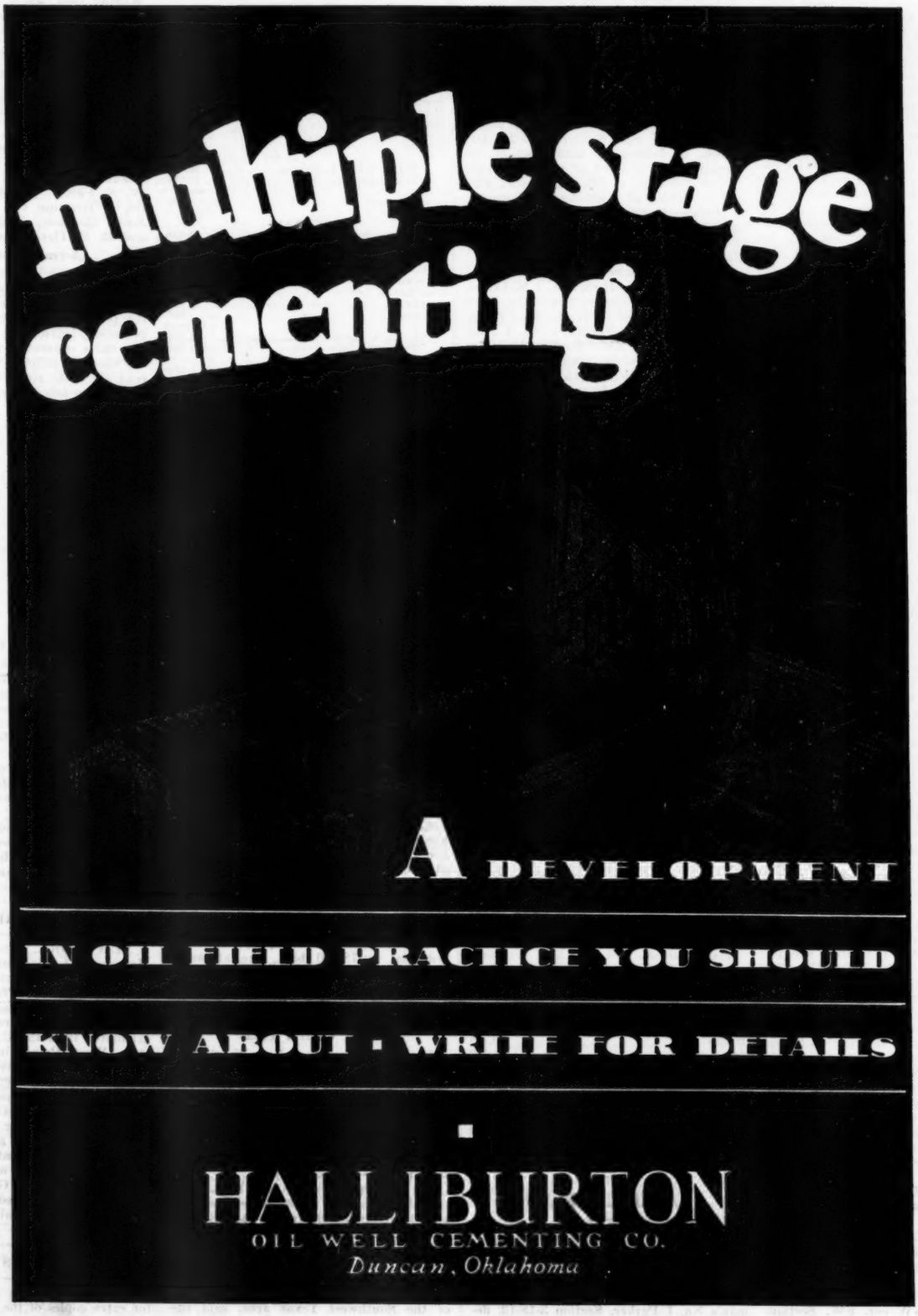
JOBBER BUYING IN CHICAGO INCREASES

(Continued from Page 54)

material is not showing its customary superiority and the change here has been from a range of 3 to 3⅛ cents to a range of 3⅛ to 3⅜ cents. Oklahoma kerosene is apparently the favored product among district marketers. Some desirable kerosene which should be in good demand from consumers is slightly off color. However, the marketers handling this material show no inclination to shade their quotations because of the color.

Fuel Oils and Gas Oils

The fuel oil and gas oil markets have been quiet since winter loosened its icy grip a couple of weeks ago. Several changes have been made in the distillate quotations. The revisions have been upward and do not bear on seasonal considerations, obviously. The 32-36 industrial gas oil which has been selling at 1 to 1¼ cents, was moved up an eighth of a cent from the low. The 38-40 light straw tractor fuel remains at 2⅛ to 2¼ cents after its advance of last week. The 32-36 straw is in better position at 1⅞ to 2 cents, while the 38-40 straw has moved up to 2 and 2⅛ cents. It is reported that much of the 28-30 zero fuel oil in the market is a blend of recycle stock and heavier. Fuel oil prices are stationary.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HALLIBURTON
OIL WELL CEMENTING CO.
Duncan, Oklahoma

ROCKY MOUNTAIN AREA

(Continued from Page 43)

doned a few months ago as failures in the Dakota formation, there was considerable pessimism concerning future possibilities in northeastern Colorado. Especially was this true when two other failures were scored at Greasewood. Since then the oil men have had time to consider the situation in the light of knowledge gained and it can be stated with assurance that they are far from being discouraged. As far as Greasewood is concerned, the two failures were on the western and southwestern sides and merely determined the limits of the pool in those directions. The territory to the north, east and southeast of the producers is just as speculative as to possibilities todays as when the discovery well came in. It remains to be determined whether the four producers in the field are near the edge of a major pool or are representative of the type of wells that will be brought in. Outside of Greasewood, the four failures last fall were widely scattered and some of them were drilled on magnetometer highs.

Considerable thought also is being given to the possibilities of sands in the Pierre shale in that area. The marine shales of the Pierre vary in thickness from close to 10,000 feet in the basins east of the mountain range to around 4,500 feet at Fort Morgan. Five sands are logged in the Pierre at Wellington and Fort Collins, the more important being the Hygiene in the lower part of the formation. Between Denver and the Greasewood district three of these sands have been definitely identified in well logs. The opinion prevails that these sands thin considerably and are less promising towards the eastern and southeastern sides of the Julesburg Basin. Encouraging shows of oil and gas have been found in these horizons at several places, but it generally is agreed they have not been drilled sufficiently to fully disclose their possibilities. The Hygiene sands are lenticular and usually are free of hydrostatic pressure. Some geologists have expressed the opinion that they may serve as reservoirs for oil originating in the shale regardless of whether there is structure and that oil may accumulate in them in synclines. Under these conditions, they say, the full possibilities of certain parts of eastern Colorado may not be revealed until every township is drilled. The Hygiene sands lie much closer to the surface than the Dakota series which were the objectives of the several deep wildcats drilled last year.

Archuleta County

Oil City Petroleum Co.'s No. 1 Russell, NW, Section 35-33n-2e, Price Dome, is reported to have topped a sand in the basal Mesa Verde at 256 feet which is showing considerable gas. Total depth is 262 feet. It is waiting for swedge nipple and valves and when the latter are installed, the hole will be drilled 25 or 30 feet deeper to penetrate the sand. This well is to the north of No. 1 Crowley, which made around 300,000 feet of gas in the same horizon at 235-47 feet. No. 1 Russell is said to be showing up better than the other well. The same company's No. 1 Fitzhugh, NW SE SW, Section 34-22-1e, Chromo Dome, is shut down at 717 feet for fuel, waiting until the roads are passable. At this depth it showed considerable gas from the Dakota through water in the Dakota. An attempt to shut off the water failed and it will be recemented.

WYOMING

Weston County

Federal Oil Co. has made a location for its No. 2, CEL NE SE, Section 15-46-64, in the vicinity of some good producers, and is digging slush pits. Egaso Operating Co.'s No. 16, SE cor. NE, Section 17-46-64, is drilling at 300 feet. Tug Oil Co.'s No. 1, NW cor. SW, Section 15-46-64, is waiting after cementing cave at 2,700 feet. Julius Peters and others' No. 1 Witzell, SE cor. NW, Section 30-46-64, Fiddler Creek, is preparing to resume at 3,400 feet after being shut down for the winter.

Fremont County

Ward Oil & Gas Co.'s No. 2, NW cor., Section 27-34-90, Dutton Basin, is rigged and ready to spud. The Whipple Drilling Co. has the contract to carry it through the Frontier series to 2,700 feet and a supplemental contract to take the hole to 4,500 feet, if necessary. It will be drilled with rotary. It is close to No. 1, in which the hole was lost, but which had good shows in the Frontier.

MONTANA

Carbon County

Ohio Oil Co.'s No. 1 Kuchinski, NW SE NE, Section 15-7s-22, Golden Dome, is drilling at 5,117 feet in the second Frontier with nothing of importance showing. The first Frontier was dry. The same company's No. 2 Montana Industrial, C NW SE, Section 11-7-21, Dry Creek, is drilling at 4,230 feet in the Frontier with a show of gas. The Ohio's No. 2 Robinson, C SE SE, Section 3-7s-21, is drilling at 1,406 feet, and its No. 1 Caldwell, Section 12-7s-22, has rig completed. Carbon Oil & Gas Co.'s No. 1 McMinn, NW SW SW, Section 7-7s-22, is drilling at 3,150 feet.

Glacier County

J. T. Finn and others' No. 1 McLellan, NW cor. SE, Section 12-34-6w, Cut Bank district, has moved in five loads of rotary equipment. R. C. Tarrant's No. 1 Hogland, NW cor. SW, Section 13-34-6w, has resumed and is cleaning out at 2,559 feet, at which depth 8¼-inch was set before shutting down for the winter.

Pipe Line Runs

Average daily pipe line runs for the week ended April 2:

WYOMING	
Salt Creek	22,290
Badger Basin	50
Big Muddy	1,580
Byron-Garland	1,050
Dallas-Derby	380
Dutton Creek	70
Elk Basin	580
Ferris	30
Frannie	2,270
Grass Creek	2,140
Hamilton Dome	760
Hudson	430
LaBarge	730
Lance Creek	100
Lost Soldier	2,510
Midway	80
Oregon Basin	630
Osage	1,100
Pilot Butte	30
Rock River	1,740
Poison Spider	30
Teapot	20
Total Wyoming	38,600
MONTANA	
Buckley-Border	640
Cat Creek	910
Dry Creek	300
Kevin-Sunburst	3,430
Lake Basin	60
Pondera	1,330
Total Montana	6,670
COLORADO	
Florence	290
Fort Collins	920
Iles	770
Moffat	710
Orchard	430
Rangely	90
Tow Creek	290
Total Colorado	3,500
NEW MEXICO	
Rattlesnake	725
Hogback	300
Table Mesa	70
Artesia	632
Cap Rock	846
Hobbs	31,295
Jal	839
Lea City	2,010
Eunice	455
Texas Pacific	200
Total New Mexico	37,372
Total Rocky Mountain area	86,142
Total previous week	86,348
Difference	206

LA.-ARK. FIELDS

(Continued from Page 40)

ers Oil & Development Co.'s No. 1 Haynie, Section 1-17-16, is testing 2 feet of oil sand at 2,138 feet. In the Urbana area of Union County, Wilson & Chapman's No. 1 Parker, Section 3-18-13, developed over 400 feet of oil in the hole in 10 minutes on drill stem test at 3,576 feet. The well encountered 5 feet of oil sand from 3,563-68 feet and was cored to a total depth of 3,576 feet before the test was made.

Daily Average Runs

There was an increase of 1,200 bbls. daily in the average runs from the fields of North Louisiana and Arkansas during the past week. The increase from Arkansas was 755 bbls. daily, due to a step up in Smackover and Urbana while North Louisiana increased 445 bbls. daily. The daily average runs from the several pools were:

NORTH LOUISIANA	
Caddo, light	5,485
Caddo, heavy	1,945
Cotton Valley	550
DeSoto-Red River	2,010
Elm Grove	340
Haynesville	4,665
Holly	285
Homer	2,880
Pleasant Hill	300
Sarepta-Carterville	810
Urania	3,025
Zwolle	6,055
Total North Louisiana	28,350
Total previous week	27,905
Increase	445
ARKANSAS	
Champagnolle	1,870
El Dorado	3,100
Lisbon	540
Nevada	1,250
Smackover, light	2,905
Smackover, heavy	23,685
Stephens	650
Urbana	900
Total Arkansas	34,900
Total previous week	34,145
Increase	755
Total both states	63,250
Total previous week	62,050
Increase	1,200

COMMISSION REVISES TEXAS ALLOWABLES

(Continued from Page 15)

wells in the Canyon formation of the Wichita area, so they will be 660 feet apart, and 330 feet from property lines, instead of 150 and 300 feet.

In the Winkler Field, E. G. Allen, Shell Petroleum official, said the field has a production allowable of 35,000 bbls., or 68 bbls. for each of the 451 wells; that it is producing 21½ bbls. of water to each barrel of oil, and that the allowable should be unchanged.

A slight increase for the Penn Pool, Ector County—named for the late Robert Penn of Austin—was asked by E. A. Landreth, who said the 80 wells there are producing under a 6,300-bbl. allowable, and that the gas-oil ratio can be improved by producing 7,583 bbls. daily. The gas ratio will go down from 918 to 771 feet, according to tests, he said. All gas is used in casinghead plants, he said.

Carl Estes, East Texas, wanted to know if "adding to the production there wouldn't take it off the 902,000-bbl. production agreed to for the whole State," and Mr. Landreth retorted, "I didn't know Texas had agreed to anything of the sort."

For the Howard-Glasscock area, F. C. Heath, of the Sun company, said the potential is 78,400 bbls., the allowable 26,000 bbls. from the 520 wells, now producing 23,500 bbls., or 50 bbls. per well. He said the present allowable provides for the least waste.

West Central Texas

Charles F. Roeser, of Fort Worth, proposed that the West Central Texas Field allowable of 30,000 bbls. be not disturbed. He said there were about 8,300 wells in the area, producing an average of 2½ bbls. per well. The production was running about 25,000 bbls. daily, he testified.

F. C. Sealey, of The Texas Company, said that he believed that if the Darst Creek allowable of 18,000 bbls. were slightly reduced it would be conducive to best interests of the field. He said the average production last month was 15,500 bbls. daily from 263 wells, or an average of 60.5 bbls. per well.

R. B. Swiger, representing the T. B. Slick interests in the Pettus Field, a part of the Southwest Texas area, said the 33 wells in Bee County were under an allowable of 7,500 bbls. daily. Production had been between 5,500 and 6,000 bbls. He said he believed production should be held to 6,000 bbls. in order to conserve the field.

James P. Nash, of Nash & Windfohr, recommended 10,000 bbls. for the Salt Flat Field with 285 wells, most of them making water and a field that has 50 wells plugged. Some wells are making 90 bbls. of water to 1 bbl. of oil.

Among those filing appearances for the hearing were:

Clifford Mooers, Dallas; F. P. Zoch, San Antonio; Charles F. Roeser, Fort Worth; Gen. Jacob F. Wolters, Houston; J. E. Bridwell, Wichita Falls; J. D. Parnell, Wichita Falls; G. B. Smedley, Fort Worth; E. H. Griswold, Ponca City, Okla.; George H. McIntyre, Fort Worth; Burney Braly, Fort Worth; Wesley G. Gish, Tyler; J. R. Parten, Shreveport, La.; J. W. Olvey, El Dorado, Ark.; W. A. Wise, Tyler; I. E. Wharton, San Antonio; H. M. Stalcup, Tulsa; R. W. Richmond, Corsicana; E. A. Landreth, Fort Worth; Beeman Strong, Beaumont; John R. Suman, Houston; W. S. Farish, president of the Humble Oil & Refining Co., Houston; W. W. Scott, Houston; J. A. Neath, Houston; and R. E. Hardwicke, Fort Worth.

Acreage Unit Favored

During the hearing, R. D. Parker, chief gas and oil supervisor for the railroad commission, stated he did not think the per well basis the proper method of proration, leaving the inference that acreage units constitute the best plan.

From his official records Mr. Parker read the field statistics into the record, the figures being as of February 20, and as follows:

	(A)	(B)	(C)
Panhandle	1,900	49,400	26.0
North Texas	15,000	48,350	3.2
West Central	8,300	22,700	2.8
West Texas	2,880	175,950	61.6
East Central	1,450	55,250	38.0
East Texas	4,200	279,050	66.4
Southwest Texas	3,580	52,000	14.5
Gulf Coast	2,000	113,700	51.6
Van	290	48,400	166.0
Yates	400	55,300	138.2
Howard-Glasscock	520	22,300	42.8
Winkler	490	30,500	62.2
Crane-Upton	590	19,450	32.9
Ector	80	5,400	67.5
Darst Creek	250	15,500	62.0

A—Number of wells. B—Production under allowables. C—Average per well in barrels.

Meters for Pipe Lines

Clifford Mooers, of Longview, advocated that meters be placed on every pipe line and in front of every refinery with locks having keys in possession of the commission's representatives. He said this is necessary to enforce honesty against the few who would be dishonest and who would run oil to the detriment and injury of their offset leases. He said in this way every barrel of oil could be traced and also the exact facts known as to the amount and disposition of the by-products. Mr. Mooers said he appeared at the instance of the Longview Chamber of Commerce and others of East Texas.

W. C. HARRISON DIES

NEW YORK, Apr. 4.—William C. Harrison, 41, vice president of the Oxweld Acetylene Co. and eastern manager for the Linde Air Products Co., died in Presbyterian Hospital here March 30. Mr. Harrison, a native of San Francisco, graduated from the U. S. Military Academy, West Point, in 1912, served in France during the World War and attained the rank of lieutenant colonel. In 1922 he resigned his commission and joined the Union Carbide & Carbon Corp. Before the war he was a professor of military science and tactics in the Colorado Agricultural and Mechanical College. Besides his wife he leaves three children. A brother, George L. Harrison, is governor of the Federal Reserve Bank of New York. Burial was in Arlington National Cemetery.

EXTRA COPIES AVAILABLE

Numerous requests have been received for extra copies of the article by Max W. Ball on "The Future of the Oil Producing Industry," published in The Oil and Gas Journal of February 25, 1932. This article was printed in the February issue of the Colorado School of Mines Magazine, Denver, Colo., and that publication can furnish whatever extra copies of the article may be desired.

EAST AND EAST CENTRAL TEXAS WILDCATS

(Continued from Page 30)

Wilson & Stubbs' No. 1 L. Robert, 450 ft. from S and 150 ft. from W line of lease, J. B. Wolfin Sur.....S.D. 2,035 ft.; will skid derrick.

DALLAS COUNTY

Long Creek Dev. Co.'s No. 1 T. J. Lupton, center of 160-ac. tract, 3½ miles N of Mesquite, J. Johnson Sur. .....Rig up.

Paris' No. 2 Wilkinson, 2,787 ft. from NW and 3,241 ft. from SW of John P. Anderson Sur. .....T.D. 1,230 ft.; S.D.

Joe Wilson's No. 1 fee, 600 ft. from N line and 600 ft. from W line of 1,500-ac. tr., Jno. Scroggs Sur....S.D. 1,150 ft.

DELTA COUNTY

Joiner et al's No. 1 W. H. Martin, 330 ft. from N line and midway between E and W lines of survey and lease on 2,749-ac. tract, D. Parker Sur. .....Location.

Joiner et al's No. 1 Blackwell, 800 ft. S and 150 ft. from E lines of 275-ac. tract, Dunnetelle Sur. .....Rig up.

Worthington et al's No. 1 Pejernett, 776 ft. from S and 150 ft. from W in E. Chick Sur., 1½ miles W of Horton .....S.D. 3,315 ft.

ELLIS COUNTY

Community's No. 1 Reeves .....S.D. 300 ft.

E. M. Rogers' No. 1 John Lee Winn, 1,650 ft. from E and 150 ft. from S of Orland, Orlo Wheeler Sur. ....S.D. 1,435 ft.

Worthen Pet. Co.'s No. 1 Cerf, 2½ miles NE of Ennis...T.D. 2,269 ft.

FRANKLIN COUNTY

Tom Harper's No. 1 fee, 150 ft. from N line and 200 ft. from E line of 116-ac. tr., W. M. Dawson Sur. .. S.D. 520 ft.

GREGG COUNTY

Amerada Petroleum Corp.'s No. 1 C. Jenkins, 345 ft. from N line and 1,510 ft. from W line of 50-ac. lease, John Wilkinson Sur. .....Location.

P. J. Alco's No. 1 F. Thomas, 160 ft. from S line and 150 ft. from W line of 10-ac. lease, C. H. Alexander Sur. .....Waiting on cmt. to set 3,484 ft.

Arkansas Fuel Oil Co.'s No. 1 Taylor Lee, 330 ft. out of NW cor. of 52.1-ac. lease, William Robinson Sur. .....Derrick.

Atlantic Oil Producing Co.'s No. 1 T. B. Harris, 330 ft. from most easterly E line and center of N and S lines of lease, W. H. Castleberry Sur. .....Location.

M. T. Beeler's No. 1 Finley and Thomas, 150 ft. from N and 150 ft. from W of 10-ac. lease, C. H. Alexander Sur. .....Derrick.

Big Indian Oil Co.'s No. 1 W. R. Nicholson, 330 ft. from S line and 4,783 ft. from E line of tract, M. Mann Sur. .....Rig up.

Blacknight Oil Co.'s No. 1 J. G. McGrede, 415 ft. S and 310 ft. W of NW cor. of Sun Oil Co.'s J. C. McKinley 80-ac. lease, D. Sanches Sur. .....Rig up.

J. B. Bond et al's No. 1 J. H. Alexander, center of S 10 acres of N 20 acres of 50-ac. tract, D. Sanches Sur. .....Drlg. 3,560 ft.

Will Brown's No. 1 E. Choice, 400 ft. due east of Collins' No. 1 H. T. Elder .....Derrick.

D. D. D. Oil Co.'s No. 1 Sarah Dansby, 283 ft. from N and S lines and 330 ft. from E line of lease, W. P. Chisum Sur. .....Drlg. 3,090 ft.

Dodd and Markey's No. 1 J. F. Holt, 615 ft. E and 707 ft. N of SW cor. of 200-ac. tract, H. Edwards Sur...Derrick.

East Texas Refining Co.'s No. 1 J. W. Fuller, 330 ft. from W line and 300 ft. from S line of 50-ac. lease, D. Sanches Sur. .....Coring 3,630 ft.

Harry M. Edwards' No. 1 Starr Estate, 200 ft. from N line and center of E and W lines of 12.5-ac. lease, D. Sanches Sur. .....Rig up.

Farland et al's No. 1 Alexander, center of 10-ac. lease in center of 50-ac. tract, D. Sanches Sur. .....Waiting on cmt. to set; T.D. 3,594 ft.

Glasscock Bros.' No. 1 E. Bade, 157 ft. from S line and 409 ft. from W line of lease, G. W. Hooper Sur. .....Waiting on cmt. to set; T.D. 3,616 ft.

Mike Glasscock et al's No. 1 Bacle, 409 ft. from E line and center of N and S lines of 5.97-ac. lease, G. W. Hooper Sur. .....Location.

Lewis Godlin's No. 1 E. L. Walker, 330 ft. N of road, 330 ft. from E line of 80.2-ac. tract, M. Dillard Sur...Derrick.

Gulf Production Co.'s No. 1 A. King, 120 ft. E and 330 ft. N of SE cor. of church, John Moffit Sur.....Testing; T.D. 3,572 ft.

Gulf Production Co.'s No. 1 E. L. Walker, 810 ft. N and 370 ft. W of SE cor. of lease, John Tate Sur....Drlg. 3,083 ft.

Gulf Production Co.'s No. 1 Nichols, 330 ft. from N line and 344 ft. from W line of lease, D. Dainwood Sur. .....Testing; T.D. 3,683 ft.

Hamil and Smith Oil Co.'s No. 1 M. Culp, center of E half of Blk. No. 1, Mary Van Winkle Sur. .....Bldg. derrick.

Hastings et al's No. 1 Wallace, due SE offset to Victory Smith's No. 1 Knowles, M. Tennison Sur. .....Drlg. 2,700 ft.

D. W. Henke's No. 1 J. M. Christian, center of 2.9-ac. tract, G. W. Hooper Sur. .....Waiting on cmt. to set; T.D. 3,569 ft.

Iowa Payne's No. 1 Jim Gray, center of 10-ac. lease and tract, M. Tennison Sur. .....Moving in rig.

K. B. Oil Co.'s No. 1 Dickson, 150 ft. from S and 150 ft. from W of 5-ac. lease, Mary Van Winkle Sur.....S.D. 700 ft.

Landes et al's No. 1 M. B. Hughey, Blk. No. 118, Kilgore Townsite, Mary Van Winkle Sur. .....Waiting on cmt. to set 3,519 ft.

W. T. Lee et al's No. 1 fee, 125 ft. from NW line and 95 ft. from NE line of Blk. No. 37, H. R. Hokit Sur. .....Waiting on cmt. to set; T.D. 3,688 ft.

Lucy Petroleum Co.'s No. 1 B. C. Christian, 330 ft. from W line and center of N and S lines of 8-ac. lease, G. W. Hooper Sur. .....Drlg. 650 ft.

Magnolia Petroleum Co.'s No. 1 Zeigler, 330 ft. out of NW cor. of 50-ac. lease, B. N. Hampton Sur. .....Waiting on cmt. to set; T.D. 3,473 ft.

McBride's No. 1 F. Elder, 205 ft. ft. N and 320 ft. W of SE cor. of 26-ac. lease, John Wilkerson Sur. .....Set csg. 3,502 ft.

McLemore et al's No. 1 Adkins, 330 ft. N and 150 ft. W of SW cor. of Gulf Lingley lease, D. Dainwood Sur. .....Drlg. 2,998 ft.

McMahon et al's No. 1 Elder, 123 ft. E of Collins' No. 1 Elder, Mary Van Winkle Sur. .....Set surface csg.

Jim McMurray et al's No. 1 J. H. Alexander, center of E 2 acres of 50-ac. tract, D. Sanches Sur. .....Drlg. 3,170 ft.

Newman et al's No. 1 A. V. Bacle, 426 ft. S and 250 ft. W of NW cor. of Barnsdall's McGrede lease, G. W. Hooper Sur. .....Rig up.

J. D. Patty, et al's No. 1 J. C. McCormick, 207 ft. SE at right angles to Gladewater-Tyler road and 540 ft. SW of Abernathy and Kirkpatrick's No. 1 Gregston, M. Dillard Sur. .....T.D. 100 ft.

E. A. Payne et al's No. 1 R. M. Woods, 20 ft. from S line and 31 ft. from W line of 2.13-ac. lease, H. R. Holit Sur. .....Derrick.

Pennsylvania Oil & Refining Co.'s No. 1 Bonner, 693 ft. W and 330 ft. S of most easterly NE cor. of survey, James McRae Sur. .....Location.

Perry-Crews' No. 1 Clayborn, 346 ft. S along E line of C. G. Strong 56-ac. tract, L. Baty Sur. .....Set surface csg.

Peterson and Merritt's No. 1 Hem, center of 1-ac. tract of SW cor. of Meridian's Lee lease, L. J. Rigsby Sur. .....Testing; T.D. 3,644 ft.

Pilot Oil Co.'s No. 1 H. Smith, center of 3.67-ac. lease, William Robinson Sur. .....Drlg. 3,560 ft.

Powell and Irion's No. 1 T.&P., 146 ft. from N line and 80 ft. from W line of Blk. No. 12, H. R. Hokit Sur. .....Rig up.

Pruitt and Standberry's No. 1 M. B. Hughey, Blk. No. 150, Kilgore Townsite, Mary Van Winkle Sur. .....Derrick.

Reeves et al's No. 1 W. L. Hestland, center of five-eighths-acre tract, midway from Lampton Church and Sarson's No. 2 Hall, D. Sanches Sur. .....Derrick.

Ross et al's No. 1, located on Findley & Thomas 50-ac. tract, 150 ft. from S line and 6.66-ac. lease, C. H. Alexander Sur. .....Derrick.

Frank Russell's No. 1 M. Dickson, Blk. No. 184, Kilgore Townsite, Mary Van Winkle Sur. .....Drlg. 3,571 ft.

Shell Pet. Corp.'s No. 1 S. C. Fishborn, 330 ft. from N and E lines of 100-ac. lease, F. W. Johnson Sur.....Location.

Showers and Moncrief's No. 1 J. M. Christian, 177 ft. from N and S lines and 265 ft. from E and W lines of 4.33-ac. lease, G. W. Hooper Sur. .....Derrick.

Silver Star Gas Co.'s No. 1 Knight and Tabor, center of one-half-acre tract, L. B. Outlaw Sur. .....Waiting on cmt. to set; T. D. 3,619 ft.

Silver Star Oil Co.'s No. 1 Pine Hill School, center of S 1-ac. and 3-ac. tract, H. Hathaway Sur. .....Location.

V. C. Smith's No. 1 M. B. Hughey, center of Blk. No. 123, Mary Van Winkle Sur. .....Waiting on standard rig.

Victor C. Smith's No. 1 Knowles, center of Blk. 134, Mary Van Winkle Sur. .....Derrick.

Solar Exploration's No. 1 J. Elder, 300 ft. NE of Solar's No. 1, Mary Van Winkle Sur. .....Set csg. 3,530 ft.

Thompson's No. 1 Cole, E offset to Petroleum Finance's No. 2 Lacy, M. T. Cole Sur. .....Testing 3,563 ft.

T. J. Tucker's No. 1 Mary Rufus, center of one-half-acre tract, Mary Van Winkle Sur. .....Drlg. 3,200 ft.

Valentine Oil Co.'s No. 1 Goyne-Hughey, 6,100 ft. from S and 6,800 ft. from W of survey, Mary Van Winkle Sur. .....Rig up.

Ward Oil Co.'s No. 1 Nicholson, 353 ft. from S line and 3,250 ft. from E line of lease, M. Mann Sur.....Derrick.

Westheimer and Doby's No. 1 J. T. Florence, 606.3 ft. from S line and 123 ft. from W line and 474 ft. from E line of lease, Mary Van Winkle Sur. .....T. D. 3,640 ft.

Wiseman et al's No. 1 C. Jones, center of 45-ac. tract, G. W. Hooper Sur. .....Derrick.

H. E. Wrenn's No. 1 A. A. King, 150 ft. from S and E lines of 79-ac. lease, W. P. Chisum Sur. .....Derrick.

HILL COUNTY

Sherman-Houseman's No. 1 J. F. Griffith, in Samuel Waddell Sur. .....S.D. 3,256 ft.

HOPKINS COUNTY

Roark et al's No. 1 Taylor, 220 ft. from N and W lines of 80-ac. tract in the John Polk Sur. .....S.D. 540 ft.

HOUSTON COUNTY

Ramsland and Ramsland's No. 1 Pennington, 750 varas W of E line and 500 varas from S line of survey on 186-ac. tract, Ramond LaGarza Sur. .....S.D. 2,552 ft.

C. T. McManus' No. 1 Harron, 300 ft. out of NE cor. of 327-ac. tract, J. P. Procella Sur. .....Spudded and S.D. 37 ft.

HUNT COUNTY

Branson et al's No. 1 Gray .....Location.

Russell et al's No. 1 Brooks and Quattlebaum .....S.D. 1,455 ft.

KAUFMAN COUNTY

Standy Darnell et al's No. 1 Sally Pannill .....Drlg. 1,628 ft.

LAMAR COUNTY

G. W. Davy et al's No. 1 McGustion, 450 ft. from S line, 450 ft. from W line of farm and survey, Galet Wood Sur. .....S.D. 2,880 ft.

Doyle and Jondeau's No. 1 Martin, 990 ft. from N line and 330 ft. from E line of tract, Joseph Deck Sur. .....S.D. 1,070 ft.

Doyle and Jondeau's No. 1 Horn, 226 ft. from S line and 608 ft. from E line of lease, R. P. Mayor Sur. .....S.D. 2,254 ft.

LEON COUNTY

Salzer Drlg. Co.'s No. 1 Dr. J. M. Blair, 1,010 ft. from N line, 1,986 ft. from W line, Sec. 19, Blk. E, Lucia Hibbard Sur. .....Derrick on ground.

MORRIS COUNTY

Leonard's (Tucker-Fullwood) No. 1 P. M. Staggers, 450 ft. from N line and 150 ft. from E line of 65.5-ac. tract, J. D. Nelson Sur. .....S.D. 3,535 ft.

NACOGDOCHES COUNTY

Adams et al's No. 1 Fuller Brothers, located in a 269-ac. tract, Jose Flores Sur. .....Location.

Gainer et al's No. 1 Nice Well, 18 miles SE of Nacogdoches, 600 ft. from S and 150 ft. from W of Wells tract in A. Cherino Sur. .....S.D. 3,430 ft.

Joiner and Henson's No. 1 Andy Lagg, 330 ft. from N and 330 ft. from W of tract, John Durst Sur. .....S.D. 3,920 ft.

Scully & Harwell's No. 1 R. I. Driver, 1,500 ft. from SE cor. of P. B. Ballard 125-ac. tract, 15 miles SE of Nacogdoches in Patricia De Torres Sur. .....S.D. 3,808 ft.

Taylor-Vaughn's No. 1 Dixon Greer, 160 ft. from W and 450 ft. from N lines of 60-ac. tract in the M. G. Herrera Sur. .....S.D. 265 ft.

Creighton Drlg. Co.'s No. 1 J. N. Stewart, center of 79-ac. tract in the Jose Ignacio Y. Barbo Sur. .....S.D. 3,226 ft.

POLK COUNTY

Sunshine Oil Co.'s No. 1 Brawley, 150 ft. from S line and 250 ft. from E line of W 100 acres of lease, F. Johnson Sur. .....Derrick.

RAINS COUNTY

C. H. Bayliss' No. 1 Ownby, 150 ft. N and 1,100 ft. from E of most easterly SE cor. of survey, Alexander Sur. .....S.D. 4,036 ft.; to drill deeper.

Greer et al's No. 1 Roy Harper, 150 ft. from S line and E line of tract, 4 miles N of Ginger, David Rose Sur. .....Drlg. 3,400 ft.

RED RIVER COUNTY

Hoffman and Henson's No. 1 H. H. Lennox, 2,790 ft. W and 300 ft. S of most easterly NE cor. of survey, J. E. Edmondson Sur. .....S.D. 60 ft.

Concord Oil Co.'s No. 1 J. R. Dellahunty, 500 ft. from N of Isaac Moore Sur. and 200 ft. E of E line of Robert Glass Sur. .....S.D. 2,546 ft. (corrected).

ROCKWALL COUNTY

Bucanner Oil Co.'s No. 1 H. L. Lofland, center of 69-ac. tract in W. M. Bird Sur. .....Set 10-in. csg. 120 ft.

RUSK COUNTY

Anderson et al's No. 1 E. B. Alford, center of Blk. No. 3, I. Parker Sur. .....Drlg. 587 ft.

Archer et al's No. 1 Stewart, W offset to Humble's No. 2 W. B. Key, John Womack Sur. .....Location.

J. Earl Brown's No. 1 Arnold, 990 ft. from E and 330 ft. from S line of Arnold 128-ac. farm, William Christian Sur. .....Drlg. 1,900 ft.

Butler and Calhoun's No. 1 C. C. Lowe, 225 ft. from N line and 200 ft. from E line of 85-ac. lease, W. G. Tutt Sur. .....Derrick.

Byrd-Frost's No. 1 Buckner, J. E. Peyton Sur. .....Fishing 4,077 ft.

Coastal Oil Co.'s No. 1 S. H. Arnold, 300 ft. from S line and 1,200 ft. from E line of 128-ac. tract, W. G. Christian Sur. .....Location.

Combine Oil Interest's No. 1 G. W. Eaton, E offset to Gulf's No. 1-A Rayford, F. Cordova Sur. .....Derrick.

Cordova Union Oil & Gas Co.'s No. 1 C. O. Christian, 330 ft. from S and E lines of 40-ac. lease, W. A. Elliott Sur. .....Top sand; T.D. 3,772 ft.

CONSTRUCTIVE

FROM the very beginning, Natural Gas has been a Builder of Industry. It has been a constructive force in every field to which its far-flung pipe line systems have carried it. Industries have felt its stimulus, and responded in better products and processes and in lowered costs. And stimulation of local industrial activity has meant a betterment of community affairs and improved welfare for the people.

A NEW and larger industrial empire will be built, when Industry has completed the readjustments which have lately claimed its attention and its resources. * * * And, in that larger work which lies ahead, Natural Gas will again prove itself a great Builder of Industry. * * * The Hope Engineering Company — with confidence and resources unshaken—awaits this larger opportunity to serve.

HOPE ENGINEERING COMPANY

Engineers and Contractors in Pipe Line Construction

FIELD AND MARKET ANALYSIS • ENGINEERING COUNSEL AND DESIGN • ORGANIZATION AND FINANCE
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Mount Vernon, Ohio ~ New York, N. Y.

HOPE

· AMERICAN INDUSTRY NEEDS MORE NATURAL GAS ·

O. R. Cooper's No. 1 E. E. Moores, center of 1½-ac. lease, J. B. De Cadena Sur. ....Rig up.
C. A. Everts' No. 1 Cole, 210 ft. from N line and 330 ft. from E line of 50-ac. lease, D. Shaw Sur.....Waiting on cmt. to set 3,787 ft.
Everett Drilling Co.'s No. 1 Colvert School, center of 3-ac. tract, D. Clark Sur. ....Moving in.
R. W. Fair and C. L. Thompson's No. 1 W. E. Wylie, 330 ft. from S line and 330 ft. from W line of 27-ac. lease, Juan Ximenes Sur. ....Drlg. 3,050 ft.
E. P. Florey's No. 1 E. B. Alford, center of 3-ac. lease, Isaac Parker Sur. ....Derrick.
E. E. Fogelson's No. 1 D. Wadley, center of 15-ac. tract, D. Clark Sur. ....Waiting on cmt. to set 3,628 ft.
Gant-Gerwin and Wegener's No. 1 L. A. Till, 330 ft. from N line and 464 ft. from W and E line of 26-ac. lease and tract, M. V. Pena Sur. ....Derrick.
Great Eastern Oil Co.'s No. 1 C. O. Christian, 150 ft. from N line and 230 ft. from E line of lease, J. S. Whiteman Sur. ....Testing; T.D. 3,744 ft.
Gulf Production Co.'s No. 1 A. H. Rayford, 301 ft. from N line and 330 ft. from E line of 59.87-ac. lease, F. Cordova Sur. ....Running tubing 3,711 ft.
Hale and Hatchfield's No. 1 C. J. Goforth, 625 ft. from S line and 450 ft. from W line of 13.4-ac. tract, M. J. Pru Sur. ....Rig up and S.D.
Harris and Russell's No. 1 T. W. Harris, 330 ft. from S line and 660 ft. from W line of most southerly SW cor. of 160-ac. tract, 3 miles SW of Henderson, W. G. Davis Sur. ....Derrick.
Hathaway et al's No. 1 Gray, J. M. McLain Sur. ....S.D. 3,365 ft.
Heiden-Rodgerson et al's No. 1 Barton and Birdwell, N offset to Reisinger et al's No. 1 Barton, W. G. Tutt Sur. ....Drlg. 2,750 ft.
Holland et al's No. 1 S. E. Brox, 330 ft. from N line and 250 ft. from W line of 30-ac. lease, Thomas Grey Sur. ....Derrick.
Howell's No. 1 Irion and Motley, 200 ft. from N line, 1,270 ft. from W line of survey, J. Lindley Sur.....Fishing 3,700 ft.
Hudspeth's No. 1 E. B. Alford, center of Lot No. 35, T. J. Moore Sur. ....Derrick.
T. F. Hunter's No. 1 J. Johnson, 330 ft. from E line and 171 ft. from N line of 13-ac. lease, H. B. Dance Sur. ....Waiting on cmt. to set 3,773 ft.
LaSalle-Davenport and Bledsoe's No. 1 Church, 175 ft. S and 175 ft. E of SE cor. of Sun-Schuler joint lease, J. B. DeCadena Sur. ....Rig up.
Magnolia Petroleum Co.'s No. 1 W. B. Key, 330 ft. from S line and 330 ft. from E line of 56.41-ac. lease, John Lindley Sur. ....Location.
McPhail and Kimbrough's No. 1 E. A. Thrash, 150 ft. from N and W line of 4-ac. lease, Juan Ximenes Sur. ....Drlg. 2,000 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 D. Ledbetter, 425 ft. from S line and 1,165 ft. from E line of 197-ac. lease, W. J. Roan Sur. ....Derrick.
Mid-Kansas Oil & Gas Co.'s No. 1 Jim Lunsford, 460 ft. from S line and 330 ft. from W line of 66.6-ac. lease, J. B. DeCadena Sur. ....Drlg. 3,406 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 George W. Moore, 425 ft. from N line and 330 ft. from S line and 1,105 ft. from E line of 85-ac. tract, W. J. Roan Sur. ....Drlg. 3,631 ft.
Mullins and Strickland's No. 1 Brewer Cemetery, 330 ft. from N and 51 ft. E of NW cor. of Stanolind McCord 30-ac. lease, M. V. Pena Sur. ....Rig up.
Geo. L. Pace's No. 1 E. B. Alford, center of 5-ac. lease, T. J. Moore Sur. ....T.D. 3,604 ft.
Pace Petroleum Co.'s No. 1 Wells, W offset to East Texas, W. P. Chisum Sur. ....Derrick.
Pansy Oil Co.'s No. 1 E. B. Alford, center of Blk. No. 50, T. J. Moore Sur. ....Drlg. 2,943 ft.
D. B. Reed and Standard Supply Co.'s No. 1 Church, 121 ft. NE along SE line and 86 ft. NW at right angles, J. B. De Cadena Sur. ....Derrick.
Ross Seward's No. 1 Burton, J. J. Y'Barbo Sur. ....S.D. 3,077 ft.
Sabins et al's No. 1 J. R. Irion, 330 ft. from S and E line of 2-ac. tract, John Womack Sur. ....Rig up.
H. G. Sampson's No. 1 Goforth, 200 ft. NE along road from most northerly NE cor. of Cloud's lease and 50 ft. S at right angles ....Derrick.
R. E. L. Silvey's No. 1 P. G. Warren, 155 ft. from S line and 96 ft. from E line of 44-ac. tract, John Womack Sur. ....Drlg. 1,000 ft.
Jay Simmon's No. 1 D. C. Joyner, 2,050 ft. from S line and 300 ft. from W line of 74.11-ac. tract, F. Cordova Sur. ....Derrick.
Sinclair Oil & Gas Co.'s No. 1 W. G. Grissom, 330 ft. from N line and 330 ft. from E line of 50-ac. lease, W. D. Porter Sur. ....Derrick.
Spansco Oil Co.'s No. 1 J. R. Alford, center of Lot No. 33, T. J. Moore Sur. ....Drlg. 3,475 ft.
Stewart and Duffy's No. 1 Lawn, N offset to S. & D. Florence's No. 1 Gibson, W. G. Tutt Sur. ....Drlg. 3,000 ft.
J. E. Stone Lumber Co. and Imperator Oil Co.'s No. 1 School Lot, center of School Lot, J. B. Cadena Sur. ....Drlg. 2,640 ft.
Tex Jersey Oil Co.'s No. 1 Cora Hannah, center of 6-ac. lease, J. B. De Cadena Sur. ....Derrick.
Trico Oil Co.'s No. 1 Pinkston, skidded derrick 60 ft. E of old Phillips junked hole, J. B. De Cadena Sur. ....Rig up.
Weaver-Crim's No. 1 F. Bean, 175 ft. from NW line and 212 ft. from S line of 16-ac. lease, Mary Cogswell Sur. ....Derrick.

JOINER POOL—RUSK COUNTY

Armstrong's No. 1 Alford, 151 ft. from S and 1,080 ft. from W of survey, T. J. Moore Sur. ....Derrick.
Paulett et al's No. 1 Ed Sparks, 350 ft. from E, 150 ft. from S of survey, L. C. Riggs Sur. ....S.D. 1,465 ft.

SAN AUGUSTINE COUNTY

A. H. Jones and Tennant's No. 1 A. P. Davis ....Drlg. 3,475 ft.

SMITH COUNTY

Acme Oil Co.'s No. 1 Horton, 330 ft. from N and W lines of tract, Mar Sewell Sur. ....Drlg. 3,900 ft.
British-American's No. 1 M. L. Thompson, 330 ft. from N and W lines of 64.52-ac. lease, Isaac Moore Sur....Drlg. 1,010 ft.
Deaner and Reynolds' No. 1 J. B. Wilson, 330 ft. from S and W lines of 20-ac. lease, James Jordan Sur.....T.D. 3,750 ft.
Hasmussen et al's No. 1 S. S. Cooke, 723 ft. E and 554 ft. S of SW cor. of Mayfield 99-ac. tract, Juan Vargus Sur. ....S.D. 2,900 ft.
Hamp Florence's No. 1 S. S. Cooke, 150 ft. from S and E lines of 20-ac. lease, Juan Vargus Sur. ....Testing 3,757 ft.
Hawkins and Sutton's No. 1 Church, 345 ft. from S line and center of E and W lines of 8.73-ac. lease, James Jordan Sur. ....Fishing 2,850 ft.
J. E. Lucas' No. 1 Henry Jackson, 150 ft. from N and E lines of 25-ac. tract, James Jordan Sur. ....Rig up and S.D.
Lucas & Hobbe's No. 1 L. S. Sartin, 214 ft. from S line and 330 ft. from E line of 10-ac. lease and 76-ac. tract, James Jordan Sur. ....Waiting on cmt. to set 3,780 ft.
Nash and Bloxom's No. 1 Frank Cole, 330 ft. from S and E lines of 87-ac. tract ....Drlg. 3,705 ft.
Weaver-Crim Corp.'s No. 1 Stone and Lee, 330 ft. from E line and 530 ft. S of Sessions' No. 1 Attaway, D. Shaw Sur. ....Drlg. 3,020 ft.
Sinclair Oil & Gas Co.'s No. 1 E. E. Moore, 330 ft. from S and E lines of 97-ac. lease, Juan Vargus Sur. ....Location.
Sun Oil Co.'s No. 1 St. Clair, 330 ft. from N and E lines of 100-ac. tract, Juan Vargus Sur. ....Derrick.
Zion Oil Co.'s No. 1 Sartin, 665 ft. N and 328 ft. W of SW cor. of Mayfield 94-ac. tract, James Jordan Sur. ....Drlg. 3,16) ft.

TITUS COUNTY

Perry V. Cook's No. 1 M. C. Rogers, center of SW of Moore Sur. ....S.D. 3,860 ft.

UPSHUR COUNTY

L. G. Bradstreet et al's No. 1 O. M. Victory, 330 ft. from N and E lines of 10-ac. lease, E. A. J. Evans Sur. ....Location.
Pat Hudson et al's No. 1 D. F. Smith, 330 ft. out of SE cor. of W 100 acres of the N 200 acres of the 272-ac. lease, 3 miles E and 1½ miles N of Cranfill & Reynolds' No. 1 Rash, John Denson Sur. ....Drlg. 150 ft.
Lester et al's No. 1 J. Jones, 304 ft. from most easterly E line and 350 ft. S of roads, William King Sur. ....Rig up.
J. C. McFarland et al's No. 1 Willie Starr, center of S 40 acres of Starr 96-ac. tract, Charles Cooper Sur. ....S.D. 3,250 ft.
Saturn Oil Co.'s No. 1 W. F. Smith, 330 ft. from E line and center of N and S lines of S 25 acres of W 50 acres of 100-ac. tract, J. Pineda Sur. ....T.D. 3,716 ft.; plugged back to 3,704 ft.; testing.
A. A. Trammell et al's No. 1 E. H. Hampton, 330 ft. from S and E line of S 60 acres of E 150 acres of 192-ac tract, William King Sur. ....Rig up.
L. E. Trout et al's No. 1 O. M. Victory, 330 ft. from S and E lines of 60-ac. lease, E. A. J. Evans Sur....Derrick.
Webster's No. 1 R. H. McClelland, 1,956 ft. E and 385 ft. S of NW cor. of 751-ac. tract, M. P. Del Torres Sur. ....Derrick.

VAN ZANDT COUNTY

Barton et al's No. 1 C. L. Hubbard, 600 ft. out of NE cor. of Hubbard 225-ac. tract, 3½ miles S of Canton, M. J. DeCadena Sur. ....S.D. 2,104 ft.
Humble Oil & Refining Co.'s No. 1 J. F. McPherson, 308 ft. E of W line and 200 ft. N of S line of lease, William Daniel Sur. ....T.D. 2,959 ft.; testing.
Kelly O. & G. Co.'s No. 1 Lemsford, center of Lemsford tract, John Conner Sur. ....S.D. 2,300 ft.
Pure Oil Co.'s No. 1 R. Clark, 910 ft. S of N line and 704 ft. W of E line of lease, Phillip Mason Sur. ....Cmt. setting 305 ft.
Pure Oil Co.'s No. 2 P. E. Neill, 329 ft. N of S line and 59 ft. E of W line of lease, John Walling Sur. ....Drlg. 1,685 ft.
Pure Oil Co.'s No. 3 Mrs. C. White, 250 ft. E of W line, 250 ft. S of N line, John Walling Sur. ....Derrick.
Pure Oil Co.'s No. 4 R. E. Cade, 200 ft. N of S line and 225 ft. E of W line of lease, A. McPhail Sur. ...Cmt. setting 2,851 ft.
Pure Oil Co.'s No. 4 J. J. Murphree, 692 ft. S of N line and 200 ft. E of W line of lease, John Walling Sur. ....Location.
Pure Oil Co.'s No. 4 L. A. Smith, 635 ft. N of S line and 683 ft. E of W line of lease, John Walling Sur. ....Cmt. setting 2,531 ft.
Pure Oil Co.'s No. 5 R. E. Cade, 225 ft. S of N line and 225 ft. E of W line of lease in A. McPhail Sur. ....Cmt. setting 299 ft.
Pure Oil Co.'s No. 9 A. R. Tunnell, 644 ft. N of S line and 250 ft. W of E line of lease, John Walling Sur. ....Derrick.
Van Oil Association's No 1 Tankersley, 200 ft. from E and 1,000 ft. from S of farm, L. Landers Sur. ....S.D. 2,761 ft. (corrected).

WOOD COUNTY

Talko Oil Co.'s No. 1 G. T. Ross, B. L. Smith Sur. ....S.D. 2,760 ft.
Wood County Dev. Co.'s No. 1 Davis, approximately 180 ft. from S line of 160-ac. tract and 2½ miles S of Kantes in Sarah McDonald Sur. ....Moving in rig.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 26)

Jewel Oil Co.'s No. 1 Meera, 330 ft. from S and W, NW SW, Sec. 106, Blk. 3, I.&G.N. Sur. ....Drlg. 3,275 ft.
Nelson et al's No. 1 Crews, 330 ft. S and E, NW, Sec. 12, Blk. 35, H.&G.N. Sur. ....S.D. 2,620 ft.; estimated 4,000,000 ft. gas.
Nipper et al's No. 1 Morse, 330 ft. from N and E, Sec. 1, Blk. 26, I.&G.N. Sur. ....Fishing 2,635 ft.
Operators Royalty & Prod. Co.'s No. 2 Arnold, 330 ft. from S and W, Sec. 149, Blk. 3, I.&G.N. Sur. ....Rig.
Parton & Holt's No. 2 Morse, 330 ft. from W, 250 ft. from N, W½ SW, Sec. 5, Blk. 26, H.&G.N. Sur. ....Rigging up cable tools.
Phillips Pet. Co.'s No. 6 Wood-Wright, 330 ft. from N and E, Sec. 13, Blk. 3, I.&G.N. Sur. ....Cellar.
Pulse-Shell Pet. Corp.'s No. 1 Culler, 330 ft. from S and E, Sec. 173, Blk. 3, I.&G.N. Sur. ....Cellar.
Saunders et al's No. 2 Sullivan, 822 ft. from W. and 231 ft. from NE, 160 ft. S, 264 ac. of N½, Sec. 136, Blk. 3, I.&G.N. Sur. ....Will plug back to 3,275 ft. and shoot.
Shamrock Oil & Gas Co.'s No. 3 Saunders, 330 ft. from S and W, Sec. 40, Blk. 3 ....Rig on ground.
Skelly Oil Co.'s No. 26 Schaffer, 330 ft. from S and W, Sec. 172, Blk. 3, I.&G.N. Sur. ....T.P. 3,170 ft.; T.D. 3,300 ft.; shot off pipe.
Skelly Oil Co.'s No. 28 H. Schaffer, 440 ft. from S line and 440 ft. from E line of NE Sec. 189, I.&G.N. Sur., Blk. 3 ....Drlg. 2,375 ft.
Skelly Oil Co.'s No. 29 Schaffer, 440 ft. from S and W, Sec. 171, Blk. 3, I.&G.N. Sur. ....Rig.
Skelly Oil Co.'s No. 30 Schaffer, 220 ft. from N, 440 ft. from W, Sec. 172, Blk. 3, I.&G.N. Sur. ....Rig.
Skelly Oil Co.'s No. 31 Schaffer, 1,320 ft. from S, 440 ft. of N½, Sec. 189, Blk. 3, I.&G.N. Sur. ....Location.
Stanolind Oil & Gas Co.'s No. 2 Waggoner, 330 ft. from N and W, Sec. 173, Blk. 3, I.&G.N. Sur. ....T.D. 3,252 ft.; to shoot.
Tarber's No. 1 Saunders, 330 ft. N and W, Sec. 3, Blk. 1, B.B.&S.F. Sur. ....Location.
Texas Co.'s No. 7 Wright, 330 ft. from N and W, Sec. 13, Blk. 3, I.&G.N. Sur. ....Bldg. rig.
Travis' No. 3 Back, 330 ft. from S, 2,300 ft. from E, Sec. 44, Blk. 25, H.&G.N. Sur. ....Spudded.
Warner Oil Co.'s No. 2 Chapman, 382 ft. N, 220 ft. W of E 20 ac. of N½ NW, Sec. 69, Blk. 25, H.&G.N. ..Location.

HUTCHINSON COUNTY

Baso's No. 1 Moore, 330 ft. from S and 330 ft. from E, in 80 ac. in NW, Sec. 21, Blk. M-21, T.C.R.R. Sur.....S.D. 2,220 ft.
Combination O. & G. Co. and Alspaugh's No. 1 Johnson, 330 ft. from S line, 330 ft. from E line of NW SW, Sec. 4, Blk. Y, A.&B. Sur. ....Drlg. 2,055 ft.
Danciger O. & R. Co.'s No. 1 Johnson, 330 ft. N and W, SE, Sec. 34, Blk. Y, A.&B. Sur. ....Spudded and S.D.
Deal O. & G. Co.'s No. 2 Sanford, 330 ft. N and E of N 80 ac., S 160 ac., Sec. 31, Blk. 46, H.&T.C. Sur. ....S.D. 450 ft.
Huber Prod. Co.'s No. 1 Johnson Bros. (Premier), 330 ft. N and E of W 60 ac., N 80 ac., NW, Sec. 3, Blk. Y, A.&B. Sur. ....S.D. 3,125 ft.; I.P. 10 bbls. per hr. and 500,000 ft. gas.
Huber Pet. Co.'s No. 1-A Weatherly, 330 ft. from N and W, Sec. 36, Blk. Y, A.&B. Sur. ....Rig.
Liner Drlg. Co.'s No. 1-D Johnson, 330 ft. from N and E, Sec. 6, Blk. 1, B.&B. Sur. ....S.D. 3,152 ft.

Oates and Marrow's No. 1 W. A. Starnes, C SE SW SE Sec. 24, M-23 T.C.R.R. Sur. ..... Drlg. 2,060 ft.
Pharis Oil Co.'s No. 5 Smith, 660 ft. from N and W, SW, Sec. 14, Blk. Y, M.&C. Sur. ..... Spudded.
Timms-Deatch's No. 4 Moore, 330 ft. N and W, Sec. 134, Blk. 4, I.&G.N. Sur. ..... Rig.

LIPSCOMB COUNTY

Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. ..... T.D. 5,003 ft.

MOORE COUNTY

Dogie Oil Co.'s No. 1 Greenwald, 330 ft. from N and W, Sec. 277, Blk. 44, H.&T.C. Sur. ..... Drlg. 30 ft.
Dana O. & G. Co.'s No. 1 Robertson et al, 330 ft. from S and E, Sec. 165, Blk. 3-T, T.&N.O. Sur. ..... Cellar.
Interstate's No. 1 Nield, C NE, Sec. 18, Blk. 44, H.&T. C. Sur. ..... Rig up.
Magnolia Pet. Co.'s No. 1 Nield, 330 ft. from S and E of N½, Sec. 361, Blk. 44, H.&T.C. Sur. ..... Standardizing 3,395 ft.
Pollard et al's No. 1 Hall, 330 ft. S and E, NE, Sec. 131, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.
Sunray Oil Co.'s No. 2 Jones, 330 ft. N and W, W½ SW, Sec. 164, Blk. 3-T, T.&N.O. Sur. ..... Rig on ground.
Sunset Oil Co.'s No. 1 R. O. Brumley, 330 ft. from N line and 330 ft. from W line of SW, Sec. 360, H.&T.C. Sur. ..... T.D. 2,805 ft.; split pipe; to pull.
Sunset Oil Co.'s No. 1 Dore, 330 ft. from N and W, W½ Sec. 318, Blk. 44, H.&T.C. Sur. ..... Drlg. 1,965 ft.

MOTLEY COUNTY

Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. ..... S.D. 530 ft.

OLDHAM COUNTY

Amalgamated German-American Oil Corp.'s No. 1 Norton, 330 ft. S and E, Sec. 12, T.&N.O. Sur. ..... S.D. 400 ft.
Chambers et al's No. 1 Herring, CNL, Sec. 20, Blk. S, G.C.&S.F. Sur. ..... S.D. 3,555 ft.

PARMER COUNTY

Magnolia Pet. Co.'s No. 1 Wilson, 330 ft. from N and W, SE Sec. 73, H. Kelly Sur. ..... Drlg. 4,400 ft.

ROBERTS COUNTY

Chicken Creek Oil Co.'s No. 1 Ledrick, 330 ft. N and W, Sec. 55, Blk. C, G.&M. Sur. ..... T.D. 3,990 ft.
Travis et al's No. 1 Cunningham, 330 ft. S and W, Sec. 74, Blk. M-3, H.&G.N. Sur. ..... S.D. 2,690 ft.

WHEELER COUNTY

Devore & Robinson's No. 1 Sitter, 2,310 ft. from S and E of E½ of Sec. 33, Blk. 24, H.G.N. Sur. ..... S.D. 2,193 ft.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 26)

Cranfill & Reynolds' No. 1 George, 400 ft. from N and 330 ft. from E, Sec. 200, Blk. 1, B.B.B.&C. Sur. ..... T.D. 5,255 ft.
Southern Oil Corp. of America's No. 1 Wm. Flannigan, 240 ft. from E and 165 ft. from W line of S 20 acres of SW, Sec. 20, B.B.B.&C.R.R. Sur. ..... Drlg. 2,930 ft.

GLASSCOCK COUNTY

Mann et al's No. 1 fee, 330 ft. from N and 1,980 ft. from E, Sec. 27, Blk. 34, Twp. 3s, T.&P. Sur. ..... T.D. 900 ft.; cmt. csg. 809 ft.
Peck & Service's No. 1 Gillean, 2,310 ft. from S, 1,650 ft. from E, Sec. 21, Blk. 33, Twp. 2s, T.&P. Sur. ..... Spudding.
Penn Oil Co. et al's No. 1 F. A. Hobenstreit, 2,310 ft. from N and E lines of Sec. 47, Blk. 36, Twp. 3s, T.&P. Sur. ..... Location.

GARZA COUNTY

Penny & Posey's No. 1 Justice, 1,980 ft. from S and 1,680 ft. from E of Sec. 25, Blk. 6, H.&G.N. Sur. (3,500-ft. cable tool test) ..... T.D. 3,320 ft.; to run 6⅝-in. csg.

HOWARD COUNTY

American-Maracaibo's No. 5-A Settles, 1,896 ft. from N, 1,884 ft. from W, Sec. 6, Blk. 32, T.&P. Sur. ..... Rig.
F. H. E. Oil Co.'s No. 1 Denman, 330 ft. from N, 2,310 ft. from E of Sec. 14, Blk. 30, T.&P. Sur. ..... Drlg. 1,520 ft.
Green O. & R. Co.'s No. 1 Denman, 990 ft. from S and 2,310 ft. from W, Sec. 14, Blk. 30, Twp. 1s, T.&P. Sur. .. Spudded and S.D.
Wallace et al's No. 1 Belt, 1,960 ft. from N, 2,640 ft. from W, Sec. 12, Blk. 30-1s, T.&P. Sur. ..... T.D. 450 ft.

IRION COUNTY

Apollo Oil Co.'s No. 4 Nutt, 504 ft. from N and 1,562 ft. from W of Subd. No. 6, Gonzales County School Land ..... Cellar.
Davis et al's No. 1 Suggs, 1,560 ft. from S and 925 ft. from W, Sec. 3,081, Blk. 28, H.&T.C. Sur. ..... Drlg. 7,120 ft.
Stanolind Oil & Gas Co.'s No. 1 Williams, 1,320 ft. from S and E of Sec. 1,196, T.T.R.R. Sur. ..... S.D. 7,420 ft.

JONES COUNTY

Johnson's No. 1 Huddleston, 165 ft. from S and W of N half of N half of Sec. 39, Blk. 18, T.&P. Sur. ..... Rig.
J. M. Johnson's No. 1 Swann, 6,150 ft. from S and 1,550 ft. from E, I. Miley Sur. ..... Location.
C. S. Spelling et al's No. 1 Lillie, 200 ft. from N and W Sec. 4, E. Miller Sur. No. 2 ..... Machine.
Young et al's No. 1 Harrell, 150 ft. from S and E of N half of Sec. 8, O.A.L. Sur. ..... Location.
Abers et al's No. 1 Burton, 150 ft. from S and 175 ft. from E of 43.4-acre tract in G. Martinez Sur. ..... S.D. 1,005 ft.; temp. abnd.
Transcontinental Prod. Co.'s No. 1 Rust, 5,800 ft. N and 995 ft. W of SE cor. J. J. Hughes Sur. 556 ..... Cellar.

LOVING COUNTY

Eppenauer's No. 1 Freels, 1,263 ft. from NE, 410 ft. from NW, Sec. 92, Blk. 1, W.&N.W. Sur. ..... Location.
Wm. Little's No. 1 Hugo Freels, 1,923 ft. from NE lines and 410 ft. from NW line of Sec. 92, W.&N.W. Sur., Blk. 1 ..... Drlg. 3,550 ft.
Martin's No. 1 Freels, 2,514 ft. from NE and 412 ft. from NW of Sec. 92, Blk. 1, W.&N.W. Sur. ..... Drlg. 483 ft.
Covey et al's No. 1 Wheat, 2,310 ft. from SW, 330 ft. from SE, Sec. 3, Blk. 2, W.&N.W. Sur. ..... Spudding.
Eppenauer Drlg. Co.'s No. 1 Allen, 465 ft. from NE and SE, Sec. 4, Blk. 2, W.&N.W. Sur. ..... S.D. 200 ft.
Ervin & Mahres' No. 1 Thrope, 2,310 ft. from E and 330 ft. from S, Sec. 46, Blk. 53, T.&P. Sur. ..... S.D. 810 ft.
Faibre & Evans' No. 1 Dean, 330 ft. from NE and 990 ft. from NW, Sec. 79, Blk. 33, H.&T.C. Sur. ..... Drlg. 4,240 ft.
Lewis & Siagel's No. 1 Johnson, 330 ft. from N and 1,650 ft. from W, Sec. 6, Blk. 56, Twp. 1, T.&P. Sur. .. Fishing 1,280 ft.
Lockhart & Co.'s No. 3 Bowen & Wells, 330 ft. from NE and SE of Sec. 92, Blk. 1, W.&N.W. Sur. ..... S.D. 3,385 ft.
Miller et al's No. 1 Ferguson, 990 ft. from N and E of Sec. 44, Blk. 29 ..... Spudded.
Tennant et al's No. 1 Martin, 990 ft. from NW and SW, Sec. 66, Blk. 1, W.&N.W. Sur. ..... S.D. 4,380 ft.; to run csg.
Thomas' No. 1 Wheat, 2,310 ft. from NW, 990 ft. from NE, Sec. 83, Blk. 1, W.&N.W. Sur. ..... Rigging up machine.

MENARD COUNTY

Priest's No. 1 Sorrel, 1,000 ft. from E and 200 ft. from S cor., Sec. 132, E.L.&R.R. Sur. ..... S.D. 2,860 ft.

PECOS COUNTY

Anderson's No. 1 Lee Fever, 330 ft. from N and W of Sec. 78, Blk. 8, H.&G.N. Sur. ..... S.D. 2,037 ft.
Black et al's No. 1 Pecos Valley, 1,037 ft. from SE. 433 ft. from SW, Sec. 36, Blk. 3, H.&T.C. Sur. ..... S.D. 1,040 ft.
Cardinal Oil Co.'s No. 1 J. H. Tippett ("J"), 1,980 ft. from the S line and 990 ft. from the W line of Sec. 2, D. F. Robertson Sur. ..... S.D. 675 ft.; plugged back to 600 ft.
Corvette Oil Corp.'s No. 8 H. Monroe, 1,040 ft. from E line and 150 ft. from N line of Sec. 39, G.C.&S.F. Sur., Blk. 194 ..... Location.
Culberson Bros.' No. 4 Tippett, 150 ft. from N and 1,335 ft. from W of SE, Sec. 40, Blk. 194, G.C.&S.F. Sur. .. S.D. 520 ft.
Hampton et al's No. 1 Byrne, 1,980 ft. from NW and 1,500 ft. from NE, Sec. 54, Blk. 10, H.&G.N. Sur. .... S.D. 1,275 ft.
Dittman's No. 1 Sanford, 330 ft. from NW and 1,650 ft. from NE of Sec. 55, Blk. 10, H.&G.N. Sur. ..... S.D. 1,454 ft.

PRESIDIO COUNTY

Sadler et al's No. 1 Bledsoe, 2,640 ft. from N and W Sec. 15, Blk. 254, G.C.&S.F. Sur. ..... Rig.

REAGAN COUNTY

Big Lake Oil Co.'s No. 6-C University, 1,370 ft. fro mS and 1,000 ft. from E, Sec. 12, Blk. 2 ..... Drlg. 6,775 ft.

REEVES COUNTY

Cunningham et al's No. 1 Wright, 1,320 ft. from S and W, Sec. 58, Cassel's Sur. ..... S.D. 75 ft.
F. McDorman et al's No. 1 Ray Roberts et al, 2,310 ft. from S and E lines of Sec. 22, Blk. 59, P.S.L. Sur. .... S.D. 105 ft.
James & Milton's No. 1 Patterson, 330 ft. from N and W of Sec. 21, Blk. 72 ..... S.D. 4,103 ft.
Lee O. White et al's No. 1 Hershersor, 330 ft. from N and W lines of Sec. 5, Blk. 51, Twp. 10, T.&P. Sur.. S.D. 5,044 ft.

RUNNELS COUNTY

Blue Bonnett Oil Co.'s No. 1 McMillan, 1,368 ft. from N and 660 ft. from W, Sec. 22, N. Travis Sur. ..... Drlg. 130 ft.
Dutton et al's No. 1 Dean, 5,475 ft. from NE and 1,048 ft. from NW in J. Heil Sur. No. 519 ..... S.O. 3,417-20 ft.; S.D. 3,600 ft.

SCHLEICHER COUNTY

Eastland Oil Co.'s No. 1 Joe Tisdale, C Sec. 29, Blk. M, G.H.&S.A. Sur. ..... Drlg. 5,345 ft.
Wesner et al's No. 1 Nicks, 2,310 ft. from N and 2,302 ft. from E of Sec. 77, Blk. LL, T.C. Sur. ..... S.D. 5,580 ft.; fishing.
George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,570 ft. from W, G.H.&S.A. Sur. ..... S.D. 5,053 ft.

SCURRY COUNTY

G. E. Dickman et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sub. ..... S.D. 5,050 ft.
Scurry County Oil Exchange's No. 1 Earnest, 2,310 ft. from N and W, Sec. 68, Blk. 3, H.&G.N. Sur. ..... Spudded and S.D.
Seifert & Dibble's No. 1 T. M. Blackburn, 2,310 ft. from N and 2,310 ft. from W line of Sec. 153, Blk. 97, H.&T.C. Sur. ..... S.D. 4,350 ft.

TAYLOR COUNTY

Eastland Oil Co.'s No. 1 King, 150 ft. from S and E, Lot 27, Willis Sur. ..... Location.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW Sec. 155, Blk. D, M.-K.-T. Sur. ..... S.D. 2,269 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ..... S.D. 3,150 ft.; moved off tools.
Miller Bros.' No. 1 Allison & Burke, C NW Sec. 10, Blk. 176, T.&P. Sur. ..... S.D. 120 ft.
Mid-Kansas Oil & Gas Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F. Sur.. S.D. 6,120 ft.
Jones et al's No. 1 Pankenham, C SE NW Sec. 43, Blk. B-2, C.C.S.D.&R.G.N.G. Sur. ..... S.D. 2,545 ft.
Sides et al's No. 1 Phelps, 2,157 ft. from N and 2,482 ft. from W, Sec. 5, G. W. Hurley Sur. ..... S.D. 1,000 ft.

TOM GREEN COUNTY

Andrews' No. 1 Pugh, 250 ft. from N and 5,184 ft. from E, James Eldridge Sur. No. 73 ..... S.D. 453 ft.
Belding & Dutton's No. 1 Norsworthy, 1,640 ft. from S and 587 ft. from E of John McNeese Sur. ..... S.D. 760 ft.; S.O. and gas 725 ft.
Mintex Oil Co.'s No. 1 Campbell Est., 446 ft. from S and 630 ft. from W of Sec. 180, Dist. No. 11, S.P. Sur.... S.D. 1,994 ft.
Pratt & Hancock's No. 2 Lewis, 100 ft. N and 330 ft. E of most northerly SW cor. of Joshua S. Grant Sur. No. 2 ..... S.D. 200 ft.

UPTON COUNTY

Farley et al's No. 1-B Lone, 2,310 ft. from N and E, Sec. 36, Blk. 1, M.-K.-T. Sur. ..... Drlg. 1,040 ft.

VAL VERDE COUNTY

Couch et al's No. 1 J. P. Yoas, 1,300 ft. from the N line and E line of Sec. 31, Blk. 1, I.&G.N. Sur. ..... S. D. 220 ft.
Independent Operators' No. 1 Whitehead, SE SE Sec. 10, Blk. 4, I.&G.N. Sur., elev. 1,175 ft. ..... S.D. 5,360 ft.
O. O. Owens' No. 1 Mills, Sec. 128, Blk. 1, I.&G.N. Sur., elev 2,130 ft. ..... S.D. 6,780 ft.

WARD COUNTY

Abell Bros.' No. 1 Sloan, 330 ft. from NW and NE, Sec. 24, Blk. 5, H.&T.C. Sur. ..... T.D. 2,430 ft.
Abell Bros. et al's No. 1 Smith, 330 ft. from NE and NW, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Rigging up.
Bradford & Bentley's No. 1 B. Carson, 1,650 ft. from the NE line and 990 ft. from the SE line of Sec. 26, H.&T.C. Sur., Blk ..... Spudding.
Buck Sturm et al's No. 2 R. H. Gill, 2,310 ft. from SW line and 330 ft. from SE line, Sec. 25, Blk. B-29, P.S.L. Sur. ..... Top pay 2,473 ft.; swabbing 65 bbls. per day.
Eastland Oil Co.'s No. 1 Weiss, 2,365 ft. from SE and SW, Sec. 4, Blk. 34, H.&T.C. Sur. ..... Rigging up.
Sppenauer's No. 1 Purcell, 365 ft. from SW and 1,650 ft. from SE of Sec. 17, Blk. 34, H.&T.C. Sur. ..... S.D. 2,740 ft.; estm. 25-bbl. well.
Eppenauer Drlg. Co.'s No. 1 Townsend-Moore, 990 ft. from SE and 330 ft. from SW, Sec. 17, Blk. 34, H.&T.C. Sur. ..... Spudded and S.D.
H. V. Greer's No. 1 Carr, 150 ft. from NW and 510 ft. from SW, Sec. 12, Blk. 5, H.&T.C. Sur. ..... Drlg. 2,065 ft.
Gulf Prod. Co.'s No. 10 Hutchings, 330 ft. from N and W of 5,370 acres, Sec. 5, Blk. F, G.M.M.B.&A. Sur... Drlg. 2,510 ft.
Gulf Prod. Co.'s No. 21 O'Brien, 2,557 ft. from N, 330 ft. from E of Sec. 16, Blk. F ..... Rigging up.
Massie et al's No. 1 Stewart, 330 ft. from SW and SE, Sec. 12, Blk. 14, H.&T.C. Cur. ..... Drlg. 545 ft.
Moran & Burkhart's No. 2 J. T. Sweatt et al, 3,510 ft. from SW, Sec. 1, J. Howe Sur. ..... S.D. 821 ft.
Moran & Miles' No. 1 Boogher, 3,603 ft. from NE and 1,303 ft. from SE, Sec. 11, Blk. 5, H.&T.C. Sur. ..... Running 2,020 ft.
R. F. Owen's No. 1 Lee, 1,344 ft. from NW and 4,532 ft. from SW, Sec. 1, J. Howe Sur. ..... S.D. 910 ft.
Plains Prod. Co.' and Simms Oil Co.'s No. 1 Benton Land Co., 440 ft. from the SE and 440 ft. from SW lines of Sec. 26, W.&N.W.R.R. Sur., Blk. 1 ..... Drlg. 535 ft.
Rector Oil Co.'s No. 1 Smith, 1,320 ft. from N and E, Sec. 22, Blk. A, G.M.M.B.&A. Sur. ..... S.D. 3,602 ft.
Richardson et al's No. 8 O'Brien, 1,372 ft. from N, 330 ft. from W, Sec. 5, Blk. F ..... Drlg. 200 ft.
Richardson et al's No. 7 O'Brien, 1,900 ft. from N and 330 ft. from W Sec. 5, Blk. F ..... Drlg. 2,120 ft.
Rixford et al's No. 1 Green, 330 ft. from NW and SW Sec. 4, Blk. 34, H.&T.C. Sur. ..... Drlg. 860 ft.
Stanolind Oil & Gas Co.'s No. 1 Cannon, 3,300 ft. from SE and 1,649 ft. from NE, Sec. 29, Blk. B-29 ..... Fishing 2,591 ft.
T. P. Coal & Oil Co.'s No. 2 James, 330 ft. from NW and NE Sec. 5, Blk. 34 ..... Drlg. 685 ft.
White et al's No. 1 Burtner, 150 ft. from NE and 515 ft. from SE of Sec. 3, Blk. 32, H.&T.C. Sur. ..... S.D. 755 ft.

WINKLER COUNTY

Liner Drlg. Co.'s No. 1 Campbell, 350 ft. from N and E cor., Sec. 2, Blk. B-5 ..... S.D. 4,640 ft.
Sid Richardson's No. 1 S. M.Halley, 330 ft. from the S line and 1,650 ft. from the E line, Sec. 25, School Blk. B-12 ..... Filled up 350 ft. with salt water from 3,047-56 ft.; will abandon; T.D. 3,061 ft.

Brief Items for Petroleum Refiners

National Petroleum Association Offers Interesting Program

The program for the next semiannual meeting of the National Petroleum Association to be held in Cleveland April 20, 21 and 22 has been completed and includes several group meetings in addition to the general sessions. Although most of the group meetings will be held Thursday morning, the Pennsylvania refiners will meet Wednesday evening to discuss their problems. Then on Thursday morning the other groups will meet and on Thursday afternoon the general sessions start.

The technical papers will be read at the morning meeting on Friday. The annual fellowship supper, which has featured the meetings in the past years, will be held on Thursday evening at the Hermit Club. All meetings will be held in the Cleveland Hotel.

Program of Semiannual Meeting National Petroleum Association

Group Meetings

Wednesday evening, April 20, 8 p.m.:

1. Pennsylvania refiners' group (Room 31).

Thursday morning, April 21, 10 a.m.:

1. Pennsylvania lubricating oil group (Room 29).
2. Mid-Continent lubricating oil group (Room 27).
3. Middle western region code committee of American Petroleum Institute (Rooms 26-28).
4. Traffic and transportation group (Room 30).

General Sessions

Thursday afternoon, April 22, 2 p.m. (ballroom):

1. President's address, E. M. Lyons, president, National Petroleum Association.
2. "The Big Ones and the Little Ones," Judge A. L. Beaty, president, American Petroleum Institute.
3. Address, Charles E. Arnott, president, Socony-Vacuum Oil Co.

Fellowship supper, 7 p.m., at the Hermit Club. Fred G. Clark in charge of entertainment.

Friday morning, April 23, 10 a.m. (ballroom):

1. "Qualities of Gasoline and Motor Oils from the Automotive Viewpoint," A. Ludlow Clayden, research engineer, Sun Oil Co.
2. "Antiknock Ratings" (with machine demonstrations), H. L. Horning, president, Waukesha Motor Co.
3. Discussion of marketing, led by R. W. McDowell, Mid-Continent Petroleum Corp., Tulsa, Okla., and H. W. Schmidt United Refining Co., Warren, Pa.

COTTON REFINERY OPERATING

DENVER, Colo., Apr. 2.—Crude runs from the Osage, Wyoming, Field are now around 1,100 bbls. daily, a considerable increase over a few weeks ago. The Cotton Refining Co., of Hot Springs, S. Dak., has built a small skimming plant in that city and is purchasing its crude supply in Osage and trucking it to the refinery. Negotiations are still pending for the reopening of the Egason Operating Co.'s plant and for the construction of a new plant by Oklahoma interests.

OLD DUTCH OPERATING

MUSKEGON, Mich., Apr. 2.—Operations were resumed this week at the Old Dutch Refining Co. plant, of Muskegon, after a three weeks' shutdown for general repairs. The company plans to run between 1,800 and 2,000 bbls. of crude oil daily, principally from the Mount Pleasant Field of Central Michigan.

PLAN CO-OPERATIVE DRIVE IN SALES OF ETHYL MOTOR FUEL

NEW YORK, Apr. 4.—Ethyl Gasoline Corp. and its refiner-licensees will launch a concentrated co-operative drive on Ethyl Gasoline sales during the period April 29-May 7, in which the corporation will concentrate the equivalent of four months' national advertising to boom sales of premium motor fuels, tying up its campaign with that of Ethyl licensees. The plan, which is national in scope, has met with a hearty response from interested refiners, J. C. Taylor, sales manager, states, and both from the quantity of material ordered and from verbal advice reaching the corporation as to what they will do through their own newspaper, radio, poster and sales promotion campaigns, refiner-licensees have indicated complete co-operation in the sales promotion drive, which comes at the beginning of the motoring season.

"Since the first of the year," says Mr. Taylor, in a letter to Ethyl licensees, "a number of our customers have discussed with us the possibilities of capitalizing their increases in Ethyl antiknock standard through advertising and sales promotion and have asked us if any special efforts in this direction would be undertaken by the Ethyl Gasoline Corp.

"In these discussions it has been pointed out that the raise in standard constitutes the biggest piece of news in the field of premium fuels that has occurred in the past five years at least, with a consequent opportunity for capitalizing it with the public. To this is added the further fact that the motor industry this year has generally adopted high compression and is offering new models with engines, or optional heads, that require fuel of Ethyl antiknock quality.

"Out of this informal exchange of opinion has developed this idea: That the step-up in standard and the step-up in car compression ratios present the first real opportunity for a united effort on the part of the companies selling Ethyl Gasoline to step up to the premium class millions of car owners now buying other gasolines.

"In recent months you have seen practically all motor car manufacturers advertising essentially the same things: Free wheeling, streamlining, synchromesh transmission, silent second and high compression. They have all offered the same improvements in the same language at the same time. The over-all result has been to make more owners of older cars dissatisfied and desirous of buying new and better cars than would have the advertising of any one or two or several car manufacturers alone. Thus, each member of the motor industry benefits from the collective effort of the rest, and profits individually in proportion to the advertising tonnage and ingenuity he puts behind his own particular car.

Plan of Co-operation

"The new and higher antiknock standard for Ethyl gives to the oil industry the same opportunity that high compression has given the automobile industry; and in order that the opportunity may be capitalized, we propose the following plan of co-operation:

"1. That our licensees and ourselves set aside the period of April 29 to May 7 for a concentrated advertising and sales promotion drive on Ethyl Gasoline.

"This period has been chosen because it marks the seasonal upturn in motoring and because by that time the new standard should be available everywhere. For our part, we have arranged to concentrate over that period the equivalent of four months' national advertising. This special effort will involve the use of all the national weekly magazines, various monthlies and the American Weekly—a total of 38 periodicals with a circulation in excess of 25,000,000 reaching into every community, large and small. This campaign will be comparable in its effect on the whole country to the combined advertising of the automobile manufacturers in national magazines on those common improvements that are the features of all new motor car values.

"2. That you and your jobbers during this period mass your own advertising and sales effort on behalf of your own brand of Ethyl Gasoline.

"Thus your newspaper and other local advertising, like the local advertising of the individual car manufacturer, will have the benefit of a national magazine campaign's support, and at the same time will focus the attention of local buyers of regular gasoline on your own brand of Ethyl.

"We have prepared a portfolio of advertising and sales promotion suggestions, together with samples of the actual material. We will be able to supply any of this material at substantially reduced prices by reason of our ability to pool the orders received and our arrangement to bear part of the cost.

"We ask the sympathetic consideration of this plan on the part of you and your associates, and urge it as a means by which all parties engaged in the selling of Ethyl Gasoline may unite to profit individually by creating new users for high-priced and more profitable motor fuel.

"The plan is essentially constructive. Its purpose is not the winning of present Ethyl business by one customer from another, but rather the development of more Ethyl business for every customer from the present user of lower priced gasolines."

SIMRALL PLANT UNDER WAY

CHATHAM, Ontario, Apr. 2.—Progress is being made on the construction of the Simrall Refining Co. plant at Amherstburg, Ontario. The office and foundations for the plant have been completed, and pipe line is being laid from the Detroit River to the refinery, while tanks are also under construction. The plant is expected to be ready for operations by June 1.

COMBAT REFINERY ODORS

LOS ANGELES, Calif., Apr. 2.—A meeting was held here this week attended by refinery representatives and health officials of Los Angeles County for the purpose of determining a practical plan to eliminate objectionable odors from refineries in this territory. It was decided to ask the U. S. Bureau of Mines and the Bureau of Public Health to make a survey. A fund of $17,000 was raised for this purpose.

NEW EAST TEXAS PLANTS

FORT WORTH, Tex., Apr. 5.—Another refinery has been added to the East Texas list of plants. It is Guillory Refining Co.'s 500-bbl. skimming plant at Kilgore. This makes the third plant to be located at Kilgore, the other two being the Kilgore Refining Co.'s and Southern Oil & Refining Co.'s plants. It also makes the nineteenth refinery to be constructed in the district. It averaged 75 bbls. throughput during the week.

APPOINT S. A. GIRAUD HUMBLE'S SALES HEAD

HOUSTON, Tex., Apr. 2.—Stuart A. Giraud, assistant to H. C. Wiess, vice president and director in charge of refining and sales of the Humble Oil & Refining Co., has been appointed general manager of the sales department of that company.

Stuart A. Giraud

Mr. Giraud has been associated with the Humble Oil & Refining Co. since 1916 and has been connected with the petroleum industry since 1903 in service with the former Waters Pierce Oil Corp., the Rio Bravo Oil Co. and the various Gulf companies.

THREE TEXAS PLANTS RESUME OPERATIONS

WICHITA FALLS, Tex., Apr. 2.—Three refineries in this area which have been shut down for several weeks have resumed operations. The improved refined oil prices and the prospects for a satisfactory market through the spring and summer months is responsible for the resumption of operations.

The 4,000-bbl. plant of the Dale Oil & Refining Co., located at Electra, is now operating part capacity. The Iowa Park Producing & Refining Co. is also operating part capacity at its 2,500-bbl. plant located at Iowa Park. The Taxman Refining Co. has purchased a large supply of crude oil and will operate its local plant near its capacity of 2,500 bbls. daily. The Taxman refinery also has cracking capacity.

REFINERY PLAN OFFERED TO ROYALTY OIL OWNERS

FRESNO, Calif., Apr. 4.—Fresno County owners of royalty oil have received a proposal from H. A. Stiles of Los Angeles that they pool their holdings and provide 3,000 bbls. of Kettleman Hills oil daily for a refinery that he proposes to build at Huron, southeast of this city and near Coalinga. The stockholders of the Whepley Oil Co. were to act upon the proposition here at their annual meeting.

A. M. Drew, secretary of the Whepley company, said it was still considering a plan for the erection of a refinery by the owners of the royalty oil, but that it might be dropped if sufficient interest were aroused in Stiles' plan.

Manufacture of Natural Gasoline

California Stocks Of Natural Higher At End of February

California natural gasoline manufacturers increased their stocks of gasoline at the rate of 9,010 bbls. daily during February and brought the total stocks at the end of the month to 2,191,990 bbls. Production decreased slightly, the lesser production being 329 bbls. daily, but this was too small to compensate for the lesser consumption of natural gasoline at refineries and the lesser volume shipped coastwise. Atlantic foreign shipments of natural gasoline declined from an average of 6,157 bbls. daily during January to 3,502 bbls. in February. There was an increase in the Pacific foreign shipments.

Production of liquefied petroleum gases increased from 421 bbls. daily in January to 764 bbls. daily in February. The amount marketed increased from 386 bbls. daily to 444 bbls. daily In the consolidated tabulation these products are now being included with natural gasoline.

The tabulated statistics as taken from the Bureau of Mines report follows:

California Natural Gasoline Statistics for February

	—Daily aver. (bbls.)— Feb.	Jan.
Total production	39,763	39,749
Stock transferred	385	550
Total	40,148	39,169
Deduct refinery uses:		
Run to stills	3,436	3,821
Blended	18,663	22,616
Total	22,099	26,437
Unaccounted for	2,507	2,477
Net supply	15,542	10,255
Demand:		
Domestic consumption	461	42
Pacific exports	2,569	225
Atlantic exports	3,502	6,157
Intercoastal	.....	2,344
Total demand	6,532	8,768
Surplus or (deficit)	9,010	1,487
Stocks—last day:		
Total stocks	2,191,990	1,930,705
At refineries	1,628,878	1,483,306
Elsewhere	563,112	447,399
Inside Pacific Coast territory—last day	2,191,990	1,930,705
Inside Pacific Coast territory—first day	1,930,705	1,884,623
Increase or (decrease) during the period	261,285	46,082

The operations of natural gasoline plants in California are shown in the following tables:

Number of plants operating	121
Daily capacity in thousands cu. ft.	2,455,813

Production by Fields

	Gas treated (thousand cu. ft.)	Natural gasoline produced (gallons)
Fullerton and Whittier	571,302	1,305,869
Midway	1,629,999	2,816,110
Huntington Beach	423,072	1,399,358
Kettleman Hills	9,389,276	12,389,212
Long Beach	3,971,391	8,892,982
Richfield	405,263	500,627
Santa Fe Springs	5,795,637	8,549,561
Seal Beach	558,133	968,802
Ventura Avenue	4,787,813	4,207,456
All other fields	4,398,370	6,470,491
Total	31,930,256	47,500,767

Production by Methods

Type of plant—	Gas treated M.C.F.	Natural gasoline produced (gals.)	Gasoline recovery per M.C.F. gas treated
Oil absorption	31,766,222	47,318,452	1.490
Compressor	164,034	182,315	1.111
Total	31,930,256	47,500,767	1.488

Finished gasoline produced at plants, 185 bbls.

Stocks—	Gallons	Barrels
Natural gasoline held by plant operators	6,508,069	154,954
Natural gasoline held by refineries	85,555,512	2,037,036
Total	92,063,581	2,191,990

SAFE PRACTICES IN NATURAL GASOLINE PLANT OPERATIONS

By C. L. Hightower
Texas Pacific Coal & Oil Co.*

The natural gasoline division has played a large part in improving the industry's accident record. A review of preliminary figures indicates that the 1931 frequency rate will run approximately 10.11 as compared to 39.65 in 1927. The frequency for all departments of the industry as reflected by figures already received will be about 12.06 or slightly higher than the rate for the natural gasoline division. So far, five fatalities have been reported by the natural gasoline division as against 118 for other departments of the industry. Texas has not reported a natural gasoline plant fatality for 1931 and so far as I have been able to learn, plants in the North Texas area have operated for a period of over three years without a death. The record of your division is excellent and you men are to be complimented on the interest that you have shown and the effort put forth to make this accomplishment in safety.

You must not feel, however, that your work is done because in reality it has just started. It is going to require considerable more effort to bring that frequency rate down from 10.11 than it did to reduce it from 39.65 to its present level. We naturally started out with the elimination of the most obvious accident causing conditions, conditions that were readily discernible but now it is going to be a greater problem of study and planning in order to correct existing faults.

History is only valuable to the extent that we can pick from its pages the mistakes that were made and apply the lesson learned to the present. It is with this in view that I am going to review some of the fatal and serious accidents occurring within the natural gasoline division during the past two years.

1. Two gasoline plant operators were fatally burned when vapor escaping from a leaky gasoline line ignited. A steam operated reflux pump was used to pump 84° gravity gasoline to stills for rectification. A pressure gauge was connected to the 2-inch line connecting the pump and stills about 18 feet from the reflux pump. The gauge was connected to the 2-inch by means of a quarter-inch diameter nipple, 2 inches long, which was welded to the 2-inch line. A quarter-inch gate valve was placed between the nipple and the pressure gauge, the gauge being screwed directly into the gate valve. The nipple in the gate valve broke in the threads, and the plant operators were attempting to shut down the pump and "cut out" the leaking gasoline line from the system when the explosion occurred. The pressure on the gauge was usually about 50 pounds per square inch.

The escaping vapors filled the pump house and then traveled to the boilers about 55 feet away and were ignited. The resulting explosion blew out the east side of the pump house and blew the men from the building. Vibration in the gasoline back-wash line caused the nipple to break. The accident occurred early one morning when no wind was blowing and the barometric pressure was unusually low. The gasoline vapors hung close to the ground and traveled to the near-by boilers which were located too near the high gravity gasoline lines for safety.

Since the accident, engineers at the plant have eliminated vibration in pressure gauge connections by fastening the pressure gauge to a quarter-inch diameter nipple, the nipple to a 2-inch gate valve by means of an expander plug, and the gate valve to the 2-inch gasoline line by means of a 2-inch diameter nipple about 3 inches long.

2. A gasoline plant laborer was fatally burned while repairing a boiler-feed pump at one end of a boiler room when gasoline accidentally drained to a sump pit situated back of the boiler plant and the vapors became ignited by the boilers. A change was being made in the lay-out of the gasoline delivery lines and the pipe line from a vapor-gasoline accumulator was accidentally "tied-in" to an abandoned water line that drained into the sump pit.

The mistake in identification was one very easily made under the circumstances but should serve to emphasize the importance of having some positive method of identification for water, gasoline, and fuel service lines. When lines are above the ground they may be identified either by different-diameter pipe or by a definite color scheme. Where connections are to be made to buried gasoline lines which are adjacent to other lines, it is good practice to excavate the line or long portions of it in order to be sure of its identity.

3. A laborer received injuries from which he later died when a cooling-tower bent upon which he was standing collapsed and dropped him to the ground. Both ankles were broken and the bones of his legs driven into the earth by the force of the fall. His back was also severely injured.

One of the major factors which bear directly on safety in construction work is thorough inspection of equipment and temporary scaffolds. Every practical precaution possible should be taken against using weak, faulty, or makeshift equipment and material. Workmen and foremen should always inspect all equipment and materials before its use to satisfy themselves that it is safe. The prevention of accidents in construction work depends upon the type of workmen employed, safety instruction, strength of materials, correct equipment, and safe handling of loads.

4. A roustabout doing janitor service around the office and grounds of a gasoline absorption plant was killed when struck on the back of his head by a large bolt that connected the two halves of a compressor flywheel when he went too near the flywheel.

The only duty the man had to perform inside the compressor house was to replenish and ice the drinking water cooler, which was located in a corner of the building at a considerable distance from the compressor. He had no occasion to be near the compressor flywheel. The man had exceptionally bad eyesight and it is thought that he walked too near the flywheel and in his fright on discovering his position, jumped or slipped into it.

5. A loader at a gasoline plant was venting a pump when vapors ignited

(Continued on Page 67)

*Part of paper read before meeting of plant operators at Ranger, Tex.

GAS ENRICHMENT

Liquid gas supplied by the Union Oil Co. is now being used for enrichment of the manufactured oil gas with which San Diego, Calif., and its suburbs are served. An increase of 20 to 25 per cent in plant capacity was obtainable by the liquid gas enrichment method. The total cost of the liquid gas installation is about 25 per cent of the estimated cost of oil gas equipment of equal capacity.

Gasoline Plant Operators Hold Ranger Meeting

RANGER, Tex., Apr. 2.—Discussion of the problems confronting the operator of a natural gasoline plant featured the annual meeting of Ranger group here today. More than 100 superintendents and plant men attended these meetings.

Dr. E. R. Lederer, vice president of the Texas Pacific Coal & Oil Co., and past president of the Natural Gasoline Association, who takes a very active part in refining and gasoline manufacturers' work and meetings, presided over the morning session of the meeting, J. R. Jarvis, of the Lone Star Gasoline Co., presiding over the afternoon session, with Dean Hiatt, of the Texas Pacific Coal & Oil Co., general chairman, over the evening session.

The three papers delivered at the morning session were: "Operation and Maintenance of Tank Cars," by J. C. Carrothers, of the Lone Star Gasoline Co.; "New Vapor Pressure Methods and Their Application in the Manufacture and Shipment of Natural Gasoline," by Warren Felton, of the Phillips Petroleum Co.; and "Economy in Automobile Operation," by F. L. Richardson, of the Lone Star Gasoline Co.

The afternoon session was devoted to papers and talks by the men of the plants of various companies operating in the Ranger district, and were devoted to the practical side of plant operations, each paper or talk dealing with an individual problem or factor pertaining to the plants and the manufacture of natural gasoline.

H. C. Condley of the Consolidated Gasoline Co. spoke on "Minor Details," stressing the fact that although of seemingly small importance, became great factors in the economy of plant operation and the manufacture of the product of the plants. "Such details should not be overlooked," said Mr. Condley, and "time should be spent by the men to save money, instead of paying out money to save money on minor details which are causing losses to the companies."

Stewart Cate of the Breckenridge Gasoline Co. talked on "Treating Gas to Prevent Corrosion in Regulators." This talk was followed by a discussion of the subject. Dean Hiatt of the Texas Pacific Coal & Oil Co. also spoke on "Eliminating Scale From Boilers."

W. E. Smith of the Mid-Kansas Oil & Gas Co. spoke on the advantages of small machine shop in the isolated district specifying the advantages to be gained in saving time, labor and money by having a shop handy in which minor, and sometimes even major repairs can be made, putting the plant back into operation with but a small loss in time by shut down. It is in many of these small shops that handy equipment is made, "wrinkles" are produced, and in which inventions are fostered and manufactured.

In regard to "Wrinkles," which was the subject taken by J. F. Mayo of the Lone Star Gasoline Co., much can be said about their usefulness, their value to the men in the plants, and to the companies for which the men work, and as another source of revenue to the men who invent and patent them, as many are often patented. "Wrinkles" may be pieces of new equipment invented to save labor or time around a plant, may be some part of the machinery which a man has devised to aid in the operation of the machinery, or a hundred and one other things of great value to the men and the companies for which they work.

Many such "wrinkles" were on display at the meeting, showing that the inventive minds of many of the men had been employed in devising and building such

labor saving devices. Some of these devices were in the form of handy wrenches which had been made out of junk material. One was an automatic drip, while another was a handy device used for handling liquid gas containers, or other gas drums to save time, labor, and prevent accidents. It was brought out in this talk, how one man was given a $500 check by the Natural Gasoline Association, for one device he had constructed, and how the companies co-operated in helping their men to obtain patents on equipment invented by them.

H. C. Webb of the Hanlon Gasoline Co. specified methods of "Keeping Absorption Oil in Condition." This talk was discussed by several of the men in attendance, some of them stating that while such oil was so cheap, it was hardly worth the time and expense to try to clean and use. However, this opinion was controverted by others.

"Engine Upkeep and Maintenance" was discussed by J. S. Steed of the Phillips Petroleum Corp., several engineers in the meeting asking questions in regards to the upkeep of magnetos, time and money spent in overhauling engines, magnetos and other parts of the machinery in the plants.

J. B. Joyce of the same company discussed the importance of "Air Dilution in Vacuum Lines," while J. F. Waters of the Phillips spoke on "Field Line Maintenance."

J. P. Weatherall of the same company in his paper on "Efficiency in Plant Operation," discussed plant cleanliness as a method of checking leaks, preventing accidents, giving a good psychological effect to the plant operators, and saving money for the companies.

The evening session of the meeting was devoted to a paper read on "Safety and Job Interest," by L. H. Taylor of the Lone Star Gasoline Co., and "Safety in Plant Operation," by C. L. Hightower of the Texas Pacific Coal & Oil Co.

Versatile Harry Henry of the Lone Star Gasoline Co. was given much credit for organizing a plant operators quartet, composed of Ray Miller, secretary of the Natural Gasoline Association, Mr. Rogers, superintendent of the Lone Star Gas Co., Mr. Hunter of the same company, and Harry Henry himself, who is with the Lone Star Gasoline Co. This quartet was received with much applause.

A dance at the Ranger Country Club that evening, concluded the meeting.

SAFE PRACTICES IN PLANT OPERATIONS

(Continued from Page 66)

burning him about face, arms and body. Investigation developed that the pump "kicked off" due to a vapor lock in cylinder and that the man was attempting to get it back on again at the time of the accident. The pump vent discharged inside the pump house, a corrugated iron building, and there was a telephone battery box located on the wall of the building a few feet away. The telephone rang while the pump was being vented and it is supposed that a spark from the dry cell batteries ignited the vapors. Since the accident, the battery box has been removed from the pump house and the pump vent has been extended to the outside of the building.

6. Two employes were engaged in putting a blind in a 4-inch preparatory to transferring the contents of two tanks and were overcome by gas. Sufficient gasoline leaked out when the flange on the line was separated to create a hazardous atmosphere and although the men alternated on the work, in the pit, they were overcome by the vapors and one of them, failing to respond to artificial respiration, died. Chance taking and failure to comply with safety regulations pertaining to the use of gas masks, which were at hand, played a large part in this man's death.

The fact that these routine accidents occur with such frequency and also that the fatal and serious accidents resulting from fires and explosions are usually traceable to inattention on the part of the operators to important details indicates a need for specific training on the part of the individual.

If I were a plant operator I would consider that there were five cardinal requirements necessary to safe and efficient job performance. As the first and most important of these requirements I would name loyalty. A man who feels that he is not getting a square deal and who cannot put his confidence in his company and its policies, cannot be a satisfied worker.

The next in order of these five requirements is mental alertness. The most menial task requires attention and certainty in this business of gasoline plant operation where the slightest mistake is fraught with the gravest danger, there is need for constant alertness and attention to the work at hand. The employe who comes on the job harassed with financial worries is the most likely to forget or overlook some important thing such as the level on the accumulator or water in the boilers.

The third and certainly one of the most important requirements is the physical condition of the worker.

A permanent physical disability robs us of a certain portion of our capital stock and takes away some of our earning power. The loss may not be felt immediately after the injury or the illness, but it is there and sooner or later it will combine with other disabilities to make itself materially felt. The wise man faces the question squarely, "Am I as young physically as I am in years?"

Safety consciousness is the fourth requirement of a gasoline plant operator. By safety consciousness is meant, first, the realization that accidents are costly and painful; second, that they can be prevented; and third, that each of us is morally obligated to protect ourselves as well as the other fellow from injury.

The man who considers that safety is a good thing but is not sufficiently interested to apply its teaching to his own job or in his own home is not safety conscious. It is this type of worker who shirks his duty and throws all he can onto the other fellows. He is also the type that takes his half of the highway and holds it regardless of the outcome.

Knowledge of the job is the fifth and last requirement named and is about the most important. A worker may be loyal and safety minded, but will still be incompetent if he is not trained in correct methods of operation, and by correct methods of operation is not meant methods that have always been followed, but the most advanced and practical methods prevailing in the industry.

This means that the plant operator should know more than simply what pressure to keep on certain vessels in his own plant and what valves to open and close. It means that he should know the reason behind each operation. He must know what would happen under given conditions in order to be prepared for the emergencies that frequently develop in a plant. Most anyone can operate a gasoline plant as long as everything goes right, but the worth-while employe is the one who has studied and planned out in advance what to do under given circumstances.

INDUSTRIAL USES FOR LIQUEFIED GASES

(Continued from Page 22)

ing lithographing ovens, the absence of sulphur compounds, tars, gums, and resins in the products of combustion, minimize rejections in the finished ware. Several automotive parts manufacturers having can making operations are also using G-4 butane.

Recent results using G-4 butane as a carburizing medium in both rotary and continuous furnaces prove G-4 butane to be an excellent carburizing medium. As you know, other paraffin hydrocarbons such as methane (CH_4), ethane (C_2H_6), and propane (C_3H_8) are now used as commercial carburizing mediums with excellent success.

For glass melting and annealing operations G-4 butane has proven to be a very fine fuel providing the clean, soft, long, luminous flame necessary for rapid and uniform melting. G-4 butane is used either with or without preheated air depending upon the type of tank heated. The absence of sulphur compounds in the products of combustion eliminate discoloration of finished ware in open fired annealing furnaces. Bending and cutting-off operations are also nicely performed due to the uniformity and constant gravity of G-4 butane gas.

The author believes it unnecessary to dwell upon the mechanics of the utilization of butane for industrial heating in detail as several papers on this subject have been published to date. Reference is made to the following:

"The Utilization of Commercial Butane as an Industrial Fuel," Fuels and Furnaces, January, 1930. "Butane Burned in Heat Treating Furnace," Heat Treating and Forging, January, 1930. "Saginaw Steering Gear Company," Heat Treating and Forging, May, 1930. "Butane—the New Industrial Gas," Genesee Valley Buyer, January, 1931. "Uses Compressed Natural Gas," The Iron Age, September, 1931.

In general, the nature of distribution within the plant, whether undiluted or partially mixed, high or low pressure, depends upon existing type of mixing and burner equipment, desired distribution pressures, plant temperature conditions, and the nature of the heating work. An individual plant analysis by a competent engineer is advisable before giving specific recommendations. Due to local conditions some plants use a combination of high and low pressure G-4 butane as well as partial mixed or diluted G-4 butane, in their plants.

Where conditions permit, the distribution of undiluted G-4 butane of 3,200 B.t.u. per cubic foot is the most economical, since the distribution system is automatically increased in thermal carrying capacity, assuming that the system previously was handling city gas of about 530 B.t.u. per cubic foot. This increase is approximately 220 per cent at equal line inlet pressures. G-4 butane may be distributed at higher pressures without recourse to boosters, thus further increasing the thermal carrying capacity of the plant distribution system. To accomplish this requires merely adjustment of the gas governor at the vaporizer. When using G-4 butane in a plant, boosting equipment is eliminated with resultant savings in operation and maintenance costs.

Likewise, when a new gas distribution system is installed in an industrial plant for G-4 butane service, the initial investment is less, due to pipe, valves, regulators and fittings being smaller and less costly to handle the thermal requirements of the plant. This is especially true when comparing to low B.t.u. producer gases.

Liquid G-4 butane may be piped long distances through small diameter lines from storage system to vaporizer located adjacent to the main heating load with even further economies in pipe line investment. From the vaporizer, the gas is distributed to the various appliances at the desired pressure or pressures.

When converting plants from city gas to G-4 butane gas, the gas line from the vaporizer is connected into the existing city gas distribution system at a convenient point. The city gas connection from the street main is shut off and meters removed from the plant. The statement occasionally made by inexperienced parties that low pressure G-4 butane gas has a deleterious effect upon a piping system, rendering it leaky within a short time, is absurd and places the promulgator of such a statement in a ridiculous position. Installations utilizing this method of distribution of G-4 butane gas over a period of several years are still in excellent condition. As a matter of fact, G-4 butane gas has a mild cleansing effect upon the interior of the pipe system, removing in time the accumulation of tars, gums, and resins dropped from the city or producer gas.

The author feels it is unnecessary to give in detail data on the combustion of G-4 butane and comparative combustion data as these have in previous articles been set forth in detail. Reference is made to "Butane and Its Combustion" appearing in the March, 1930, issue of Heat Treating and Forging. A few important factors affecting the sale of G-4 butane as an industrial gas service should be briefly presented.

G-4 butane is 100 per cent combustible and free of inert carbon dioxide, nitrogen and water vapor found in city gas, certain natural gases and producer gases. G-4 butane is a "dry" gas. Inerts do not enter into the combustion, but are of necessity raised to combustion temperature and leave the furnace, kiln, or oven at stack temperature, thus detracting from the total usable heat produced by the combustion process, to the extent of the heat content of these inerts at stack temperature, with consequent lowering of the overall efficiency.

The relatively high available heat of G-4 butane gas is an important factor in the obtaining of high appliance efficiencies. The available heat of any fuel is a function of its composition and of the nature of the desired type of combustion, i.e., whether neutral, reducing or oxidizing atmosphere, and consequently the available heat may be calculated for any fuel if the composition is known.

The available heat, or the heat from combustion available for heating stock and in meeting radiation losses, is the difference between the gross B.t.u. of the fuel and the heat content of the products of combustion at stack temperature. Table 1 shows some interesting available heat data.

Recent long time tests on heating a continuous porcelain baking tunnel kiln operating at a temperature of 1,375° C. have checked the theoretically calculated increase in efficiency over coke oven gas. The lower rate of flame propagation of G-4 butane gas as compared to that of coke oven, carbureted water gas and blue water gas permits the use of lower manifold pressures without backfiring trouble.

For theoretical perfect combustion of butane the equation is as follows:

$$C_4H_{10}+6.5\,O_2+24.6\,N_2=$$
$$4CO_2+5\,H_2O+24.6\,N_2$$

Therefore, 31.1 cubic feet of air are required per cubic foot of butane gas. The ultimate CO_2 or the ratio of the CO_2 produced to the total dry products of combustion is 13.986 per cent. Prior to making definite recommendations relative to the advisability of adopting G-4 butane gas, an engineering analysis is necessary. This analysis should cover such items as kinds, costs, quantities and applications of existing fuels. The analysis should cover the methods of distribution and proportioning, and should provide recommendations for a suitable butane system. The comparison should not be upon a B.t.u. basis with existing fuels as the intangible advantages of G-4 butane are of real worth to the user. Shorter heating up periods, distribution economies, increased efficiency, less rejections of finished product, improved working conditions, reduced maintenance, reduction in scale formation, longer pot or box life, and reduced burner repairs provide a large but more or less indirect saving to the users of G-4 butane.

The use of G-4 butane as an industrial gas service has rapidly increased since its inception in the latter part of 1927. The following table shows the number of industrial plants receiving initial tank car shipments of butane for the past four years:

1928	5
1929	7
1930	13
1931	38

The increase in gallons has been from approximately 170,000 in 1928 to approximately 5,650,000 in 1931. This large and increasing industrial usage of butane gas represents both directly and indirectly major fuel economies to manufacturing concerns. Those plants not using butane have in many cities benefited because of rate reductions from the local gas utility, these reductions resulting largely from butane competition.

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINES

	Apr. 5		Mar. 29	
OKLAHOMA (Group 3)—				
*U. S. Motor	.04⅛	.04⅝	.03⅞	.04¼
60-62 400	.03⅝	.04⅝	.04	.04¼
64-66 390	.04⅜	.04½	.04⅛	.04¼
64-66 375	.04½	.04¾	.04¼	.04⅜
68-70 350	.04⅝	.04¾	.04⅜	.04½
NORTH TEXAS—				
*U. S. Motor	.04	.04¼	.03¾	.04
60-62 400	.04¼	.04⅜	.03⅞	.04
64-66 390	.04⅜	.04½	.04	.04⅛
64-66 375	.04½	.04⅝	.04⅛	.04¼
64-66 360	.04⅝	.04¾	.04¼	
‡NORTH LOUISIANA—				
*U. S. Motor	.04⅝	.04¾	.04⅛	.04¼
60-62 400	.04¾		.04¼	
‡ARKANSAS—				
*U. S. Motor	.04⅜		.04	.04¼
CHICAGO Based on Okla (Group 3)—				
*U. S. Motor	.04⅛	.04⅜	.03¾	.04
60-62 400	.04¼	.04½	.03⅞	.04⅛
64-66 375	.04½	.04¾	.03⅞	.04½
Aviation fighting grade	.05½	.05¾	.05½	
68-70 360	.04¾	.05	.04⅝	.04⅝

Octane Ratings—Above quotations cover price ranges on gasoline in which no octane rating is given. In the case of the U. S. Motor and 60-62 400 endpoint grades where an octane rating of 57-65, inclusive, is guaranteed, prices are one-half cent per gallon higher than quotations shown in above tables; where an octane rating of better than 65 is guaranteed, the prices are three-fourths cent higher. In the case of the remaining grades, gasolines of 65 octane rating or higher are quoted one-half cent higher than the quotations shown in above tables. Unless otherwise provided by agreement of buyers and sellers, the Series 30 testing equipment of the Ethyl Gasoline Corp. is recognized as standard in determining octane ratings.

*Present distillation specifications on U. S. Motor gasoline are: 10 per cent evaporated, 167° F. maximum; 50 per cent, 284° F. maximum; 90 per cent, 392° F. maximum; residue not exceeding 2 per cent; maximum vapor pressure, 12 pounds. Additional specification on U. S. Motor gasoline available from bulletins of Bureau of Mines, Washington, D. C.

‡For Arkansas, Louisiana and Mississippi delivery.

PENNSYLVANIA (inland refineries)—				
U. S. Motor	.04⅝	.04⅞	.04¼	.04½
60-62 400	.04¾	.05	.04½	.04¾
64-66 375	.05	.05¼	.04¾	.05
68-70 350	.05½	.05¾	.05¼	.05½

Octane Ratings—In the case of U. S. Motor and 60-62 400 endpoint grades, same price differentials based on octane ratings as shown in above tables for Oklahoma and other Mid-Continent areas.

CALIFORNIA (domestic movement only)—				
54-58 U. S. Motor	.04½	.05	.04½	.05
58-60 400	.05	.05½	.05	.05½
EAST COAST—				
U. S. Motor, below 65 octane:				
New York (Bayonne)	.05¾		.05¾	
Boston	.06		.06	
Baltimore, Md.	.05¾		.05¾	
Charleston, S. C.	.05¾		.05¾	
U. S. Motor, 65 octane and above:				
New York (Bayonne)	.06	.06½	.06	.06½
Boston	.06¾		.06¾	
Baltimore, Md.	.06	.06¾	.06	.06¾
Charleston, S. C.	.06	.06½	.06	.06½
GULF COAST (domestic)—				
U. S. Motor, 65 octane and above	.05	.05¼		
U. S. Motor, below 65 octane number	.04¾	.05		

NAPHTHAS

	Apr. 5		Mar. 29	
OKLAHOMA (Group 3)—				
50-52 450 (blending)	.03⅞	.04⅛	.03⅝	.03¾
PENNSYLVANIA (inland refineries)—				
50-54 430-450 (blending)	.04¼	.04½	.04	.04¼
ARKANSAS—				
48-50 450 (blending)	.04½	.04¾	.04	
CHICAGO Based on Okla. (Group 3)—				
50-52 450 (blending)	.03⅞	.04⅛	.03⅜	.03¾
Cleaners' naphtha, 56-58 gr. 200 i.b.p.-320 e.p.	.06¼	.06½	.06	.06¼
Lacquer diluent, 180 i.b.p.-250 e.p.	.09¼	.09½	.09⅛	.09⅜
Lacquer diluent, 140 i.b.p.-200 e.p.	.09¼	.09½	.09⅛	.09⅜
Rubber solvent, 68-70 gr., 100 i.b.p.-300 e.p.	.05	.06	.06⅛	.06⅝
Stoddard solvent, 300 i.b.p.-410 e.p., over 100° flash	.05½	.05¾	.05¼	.05½
Pet. thinner, 290, 300 i.b.p.-415 e.p., over 83° flash	.04¾	.05	.04¾	.05
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p.-330 e.p.	.05¾	.06	.05⅝	.05⅞
Petroleum spirits	.04¼	.04⅝	.04¼	.04⅝

NATURAL GASOLINES

	Apr. 5		Mar. 29	
OKLAHOMA (Group 3)—				
Grade 18-55	.02½	.02¾	.02½	.02¾
Grade 26-70	.02⅛	.02¼	.02	
Grade 30-70	.02		.01⅞	
NORTH TEXAS—				
Grade 18-55	.02½	.02¾	.02¼	.02⅝
Grade 26-70	.02⅛	.02¼	.02	.02⅛
Grade 30-70	.02		.01⅞	
NORTH LOUISIANA—				
Grade 26-70	.02⅜		.02⅜	
CALIFORNIA—				
75-78 375	.04¼	.05	.04¼	.05

Note—Grades 18-55, 26-70 and 30-70 are three of 24 grades adopted by the Natural Gasoline Association of America effective January 1. The grades are based on pounds vapor pressure and amount evaporated at 140° F. See page 74 of January 7 issue for explanation of new grading system. While not exactly the same specifications apply, Grade 18-55 corresponds to the former Grade A; Grade 26-70 to former Grade AA and Grade 30-70 to former Grade BB.

KEROSENES

(All kerosenes water white)

OKLAHOMA (Group 3)—	Apr. 5		Mar. 29	
41-43	.03¼	.03½	.02¾	.02⅞
42-44	.03⅜	.03⅝	.02⅝	.03
NORTH TEXAS—				
40-41	.03⅛	.03¼	.02¾	
41-43	.03¼	.03⅜	.02⅞	
‡NORTH LOUISIANA—				
41-43	.03½	.03¾	.03¼	
42-44	.03⅞		.03½	
‡ARKANSAS—				
41-43	.03½	.03¾	.03¼	
PENNSYLVANIA (inland refineries)—				
45	.04	.04¼	.04	.04¼
46	.04¼	.04⅜	.04¼	.04⅜
47	.04½		.04½	
CHICAGO (Based on Group 3)—				
41-43	.03⅛	.03¼	.02¾	.03
42-44	.03⅞	.03⅜	.03	.03⅛
***CALIFORNIA—**				
38-40 high burning test	.03¾	.04½	.03¾	.04½
NEW YORK (Bayonne, N. J.)—				
41-43	.05¼	.05½	.05¼	.05½
GULF COAST (domestic)—				
41-43 water white	.04¼	.04⅜		

*For Pacific Coast consumption.
‡For Arkansas, Louisiana and Mississippi delivery.

TRACTOR FUELS*

OKLAHOMA (Group 3)—	Apr. 5		Mar. 29	
39-40 prime white	.02⅝	.02⅝	.02¼	.02½
38-40 light straw	.02¼	.02⅜	.02⅛	.02¼
NORTH TEXAS—				
38-40 light straw	.02⅛	.02⅜	.02	.02¼
CHICAGO (Based on Group 3)—				
38-40 light straw	.02¼	.02¼	.02⅛	.02¼
PENNSYLVANIA (inland refineries)—				
41-43 prime white	.04	.04¼	.03¾	.04

*There are no standard specifications for tractor fuels. Grades commonly sold have flash under 175° F. (open cup) and under 575° F. endpoint and less than .2 per cent sulphur. Tractor fuels are available from all Mid-Continent refining groups at prices in line with the Oklahoma market taking into consideration differentials in freight rates.

FURNACE OILS*

OKLAHOMA (Group 3)—	Apr. 5		Mar. 29	
32-36 straw	.02	.02⅛	.01⅞	.02
36-38 straw	.02	.02⅛	.01⅞	.02
38-40 straw	.02⅛	.02¼	.02	.02⅛
39-41 prime white	.02⅝	.02½	.02¼	.02⅝
NORTH TEXAS—				
38-40 straw	.02⅛	.02¼	.02	.02⅛
‡NORTH LOUISIANA—				
36-40	.02½	.02⅝	.02⅜	.02½
‡ARKANSAS—				
32-36	.02⅝	.02½	.02¼	.02⅝
CHICAGO (Based on Group 3)—				
32-36 straw	.01⅞	.02	.01⅜	.01⅞
38-40 straw	.02	.02⅛	.01⅞	.02
PENNSYLVANIA (inland refineries)—				
40-41 prime white	.03½	.04	.03½	
NEW YORK (Bayonne, N. J.)—				
32-36	.04		.04	
36-40	.05		.05	

*Above prices are for furnace oils of zero cold test, under 190° F. flash and good odor.
‡For Arkansas, Louisiana and Mississippi delivery.

GAS OIL, DIESEL OIL AND FUEL OIL

Gas oil (G.O.) quoted per gallon basis; Diesel oil and fuel oil per barrel.

OKLAHOMA (Group 3)—	Apr. 5		Mar. 29	
32-36 (G.O.) cracking stock	.01⅝	.01½	.01¼	.01⅜
U.G.I. (G.O.)	.01¼	.01½	.01⅛	.01⅜
32-36, zero to 15 (G.O.) high flash	.01⅝	.01¾	.01½	.01¾
28-30, zero to 10	.50	.55	.50	.55
26-30, zero to 10	.45	.50	.45	.50
24-26	.37½	.42½	.37½	.42½
20-22	.32½	.35	.30	.32½
16-20	.27½	.30	.25	.27½
Below 16	.25	.30	.22½	.25
NORTH TEXAS—				
32-36 (G.O.) industrial	.01¼		.01⅛	.01¼
22-26	.40		.40	
Below 20	.25	.35	.25	.35
‡NORTH LOUISIANA—				
32-36 (G.O.) zero	.02	.02¼	.02	.02¼
14-16	.35	.40	.35	.40
‡ARKANSAS—				
30-32 (G.O.) zero	.02	.02¼	.02	.02¼
14-16	.35	.40	.35	.40
CHICAGO (Based on Group 3)—				
32-36 (G.O.) industrial	.01⅛	.01¼	.01	.01¼
28-30 (zero)	.52½	.57½	.52½	.57½
22-26	.32½	.37½	.32½	.37½
18-22	.27½	.30	.27½	.30
Below 18	.22½	.25	.22½	.25
PENNSYLVANIA (inland refineries)—				
36-40	.03	.03¼	.03	.03⅛

Note—Fuel oils of more than 40 cold test generally 5 to 10 cents per barrel less in all areas than shown in above tables.

‡For Arkansas, Louisiana and Mississippi delivery.

CALIFORNIA—				
30-34 (G.O.) per bbl.	.80	1.00	.80	1.00
27 plus Diesel	.75	.95	.75	.95
15-19 bunker (at tidewater)	.55	.75	.55	.75
15-19 bunker (cargo lots)	.55	.70	.55	.70
15-19 (tank cars)	.40	.70	.40	.70
GULF COAST—				
28-30 (G.O.)	.02¾	.03	.02⅜	.02⅝
Bunker C (bulk cargoes)	.45	.47½	.42	.43
Bunker C (bunkers)	.50		.45	.50
NEW YORK (Bayonne, N. J.)—				
28 plus (G.O.)	.04		.03½	.04
*28-30 Diesel	1.30		1.30	
†Bunker C	.65		.65	

*Lighterage 6½ cents per barrel.
†Lighterage 5 cents per barrel.

PETROLEUM COKE*

Prices per ton f.o.b. refineries in Chicago area.

	Apr. 5		Mar. 29	
Breeze (screenings)	3.75		3.75	
Still runs	4.75		4.75	
Lump and egg	7.00	7.50	7.00	7.50

*Refiners will absorb freight up to 80 cents a ton.

NEUTRAL OILS

(Viscosity at 100° F., and Color)

OKLAHOMA (Group 3)—	Apr. 5		Mar. 29	
Zero to 10 Cold Test:				
150-3	.06¼	.06½	.06¼	.06½
180-3	.07½	.07¾	.07½	.07¾
180-4	.07	.07¼	.07	.07¼
200-3	.08½		.08½	
200-4	.08	.08¼	.08	.08¼
240-3	.09¾	.10	.09¾	.10
240-4	.09¼	.09½	.09¼	.09½
280-3	.11¼	.11½	.11¼	.11½
280-4	.10¼	.10½	.10¼	.10½
300-3.5	.11¾	.12	.11¾	.12
350-3.5	.12¼	.12½	.12¼	.12½
400-4	.12¾	.13	.12¾	.13
500-4.5	.13¼	.13½	.13¼	.13½
100-2 Paraffin Oil	.04¼	.04½	.04¼	.04½
15-30 Cold Test:				
200-3	.07¾	.08	.07¾	.08
200-4	.07½	.07¾	.07½	.07¾
240-3	.09¼	.09½	.09¼	.09½
240-4	.08¾	.09	.08¾	.09
280-3	.10¾	.11	.10¾	.11
280-4	.09¾	.10	.09¾	.10
PENNSYLVANIA—				
150 vis., No. 3, 400-405:				
Zero pour test	.15	.16	.15	.17
10 pour test	.14	.15	.14	.16
15 pour test	.13½	.14½	.13½	.15½
25 pour test	.12¾	.13¾	.12¾	.13¼
30 pour test	.12¾	.13	.12¾	.13
180 vis. No. 3, 25 pour test.	.15¼	.16½	.15½	.16½
200 vis. No. 3:				
Zero pour test	.22	.23½	.22½	.24
10 pour test	.21	.22	.21½	.23
15 pour test	.19½	.20	.19½	.21
25 pour test	.18	.18½	.18	.19
30 pour test	.17¾	.18	.17¾	.18
36 Miners Neutral	.05½		.05½	
34 Neutral	.05½		.05½	
34 Sundebloom Neutral	.05		.05	
GULF COAST—				
Pale Oils:				
100-2-2½	.05		.05	
200-3	.06½		.06½	
300-3	.07		.07	
500-3½	.08	.08½	.08	.08½
750-3½	.09	.09½	.09	.09½
1,200-3½	.10½	.11	.10½	.11
2,000-4	.12	.12½	.12	.12½
Red Oils:				
200-5-6	.05	.05½	.05	.05½
300-5-6	.05½	.06	.05½	.06
500-5-6	.06¾	.07	.06¾	.07
1,200-5-6	.09½	.10	.09½	.10
2,000-6 plus	.11	.11½	.11	.11½

REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

CALIFORNIA—

Pale Oils:

100-2½-3	.08	.08¼	.08	.08¼
200-2½-3	.08	.08¼	.08	.08¼
300-3-3½	.08½	.08¾	.08½	.08¾
350-3-4	.09	.09¼	.09	.09¼
400-3-4	.09½	.09¾	.09½	.09¾
350-3-4	.10	.10¼	.10	.10¼
550-3-4	.10½	.11	.10½	.11

Red Oils:

200-4½-5	.08	.08¼	.08	.08¼
300-5-6	.08½	.08¾	.08½	.08¾
350-5-6	.09	.09¼	.09	.09¼
400-5-6	.09½	.09¾	.09½	.09¾
450-5-6	.10	.10¼	.10	.10¼
500-5-6	.10½	.11	.10½	.11
600-5-6½	.11½	.12	.11½	.12
700-6½ plus	.12½	.13½	.12½	.13½
750-6½ plus	.13	.13½	.13	.13½
900-6½ plus	.14½	.14¾	.14½	.14¾

NEW YORK (Bayonne, N. J.)—

Paraffin Oil:

25 pale	.10¼	.10¼
28 pale	.07¼	.07¼
280 red	.12½	.12½
250 red	.11½	.11½
225 red	.10	.10
200 red	.09¼	.09¼

BRIGHT STOCKS AND STEAM REFINED STOCKS

OKLAHOMA (Group 3)—	Apr. 5		Mar. 29	
600 light green S.R.	.04	.06	.04	.06
600 dark green S.R.	.03	.04½	.03	.04½

Bright Stock:

190-200 D	.20		.20	
150-160 D, 0-10	.17¾	.18	.17¾	.18
150-160 D, 10-25	.17¼	.17½	.17¼	.17½
150-160 D, 25-40	.16¾	.17	.16¾	.17
150-160 E	.16¾	.17	.16¾	.17

PENNSYLVANIA—

600 S.R.	.12¾	.13½	.13½	.14
650 S.R.	.15½	.16	.15½	.16
600 Pennsylvania flash	.16½	.17	.17	.17½
600 D filtered	.21½	.22	.20	.20½
600 E filtered	.15½	.16	.15¾	.16

Pennsylvania Grade bright stock:

Bright Stock, No. 8 color, 145-50 vis., 210-540-550 flash:

10 pour test	.25	.26½	.25	.27
15 pour test	.22	.23	.22½	.23
25 pour test	.21	.22	.21½	.22
35 pour test	.20½	.21½	.21	.22

WAX AND PETROLATUM

(Prices per pound)

OKLAHOMA (Group 3)—	Apr. 5		Mar. 29	
124-126 white crude scale	.01¾	.01⅞	.01¾	.01⅞

PENNSYLVANIA—

122-124	.02	.02⅛	.02	.02⅛
124-126	.02⅛	.02¼	.02⅛	.02¼

NEW YORK (Bayonne, N. J.)—

Refined Wax:

120-122	.02⅞	.02⅞
125-127	.03⅛	.03⅛
130-132	.03⅝	.03⅝
133-135	.04⅛	.04⅛
135-137	.04¼	.04¼

Petrolatum in barrels in carload lots:

Dark green	.01¾	.01¾
Amber	.02⅛	.02⅛
Extra amber	.02⅝	.02⅝
Cream	.04¾	.04¾
Lily white	.05¾	.05¾
Snow white	.06¾	.06¾

EXPORT PRICES

GASOLINE

GULF COAST—	Apr. 5		Mar. 29	
U. S. Motor	.04¼	.04⅜	.04⅛	.04¼
60-62 400	.04⅜	.04½	.04¼	.04⅜
61-63 390	.04½		.04½	
64-66 375	.04½	.04⅝	.04½	.04⅝
LOS ANGELES, CALIF.—				
U. S. Motor, 53-55 437 e.p.	.03¾	.04¼	.03¾	.04¼
U. S. Motor, 65 octane num.	.05		.05	
U. S. Motor, 67 octane num.	.05¼		.05¼	
U. S. Motor, 69 octane num.	.05½		.05½	
58-62 400 endpoint gasoline	.04¼		.04¼	

KEROSENE

GULF COAST—				
41-43 prime white	.04	.04⅛	.04	.04⅛
41 water white	.04¼	.04⅜	.04¼	.04⅜
LOS ANGELES, CALIF.—				
41-43 water white	.04	.04¾	.04	.04¾

LUBRICANTS

NEW YORK (Bayonne, N. J.)—				
600, steam refined cylinder stocks, in bbls.	.21	.22	.21	.22
650, steam refined	.23½	.24	.23½	.24
600, Pennsylvania flash	.24½	.25	.24½	.25
630, Pennsylvania flash	.27½	.28	.27½	.28
600, Warren E	.23½	.24	.23½	.24
600, Oil City E	.22½	.23	.22½	.23
Light 140-150 Bright Stocks	.30	.31	.30	.31
Dark 140-150 Bright Stocks	.29	.30	.29	.30

CALIFORNIA CRUDE OIL PRICES

STANDARD OIL CO. OF CALIFORNIA

For its current purchases of crude oil at the well (unless otherwise specified) for allowable crude oil produced in accordance with allocations made by the California Statewide Curtailment Committee. All gravities above those quoted take highest price offered in that field. Effective June 19, 1931, at 7 a.m.

Gravity	Signal Hill	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Olinda-Brea, Canon	Torrance	Richfield	Coyote Hills	Santa Fe Springs	Midway-Sunset, Elk Hills Buena Vista Hills	Lost Hills
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	$.65	$.65	...	$.55	$.55
15-15.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
16-16.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
17-17.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
18-18.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
19-19.9	.65	.65	.65	.65	.65	.65	.65	.65	...	.55	.55
20-20.9	.65	.65	.65	.66	.66	.65	.65	.65	...	.55	.55
21-21.9	.65	.65	.65	.68	.67	.65	.66	.65	...	.55	.57
22-22.9	.65	.65	.66	.70	.68	.66	.68	.65	...	.56	.59
23-23.9	.67	.67	.68	.72	.70	.67	.70	.66	...	.58	.60
24-24.9	.69	.69	.70	.74	.72	.68	.72	.67	$.65	.61	.62
25-25.9	.71	.71	.72	.76	.74	.70	.74	.69	.65	.64	.64
26-26.9	.73	.73	.74	...	.76	...	...	.71	.65	.66	.65
27-27.9	.75	.75	.76	...	.78	...	...	.73	.68	.68	.67
28-28.9	.77	...	...	...	.80	...	...	.75	.71	.71	.69
29-29.9	.79	...	...	...	...	...	...	.77	.73	.74	.71
30-30.9	.81	...	...	...	...	...	...	.79	.75	.76	.72
31-31.9	...	...	...	...	...	...	...	...	.78	...	...
32-32.9	...	...	...	...	...	...	...	...	.80	...	...
33-33.9	...	...	...	...	...	...	...	...	.83	...	...
34-34.9	...	...	...	...	...	...	...	...	.85	...	...
35-35.9	...	...	...	...	...	...	...	...	.87	...	...

Standard Oil Co. of California prices in other fields:

(Continued on Page 75)

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

East Texas (Apr. 1, 1932)† ..... $ .98
East Texas (Nov. 2, 1931)‡ ..... .83
Corsicana heavy (Apr. 1, 1932)* ..... .64
Other fields.....See gravity table
†Posted by Magnolia Petroleum Co., Sinclair Refining Co., Panola Pipe Line Co. and The Texas Company. ‡Tidal Refining Co., Gulf Pipe Line Co. *Magnolia Petroleum Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective December 16, 1931)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field) (Mar. 14, 1932) $1.82
Pennsylvania Grade Oil in Southwest Pennsylvania Lines 1.55
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia) (Feb. 26, 1932) 1.50
Penna Grade Oil in Buckeye Pipe Line Lines (Mar. 12, 1932) 1.35
Corning Grade Oil in Buckeye Pipe Line Co.'s line (Nov. 9, 1931) ..... .85
Ragland Grade Oil in Cumberland Pipe Lines (Kentucky) (Jan. 10, 1931) ... .60
Wayne district Oil in Cumberland Pipe Lines (April 23, 1931) 1.17

Pennzoil Co.
(Effective March 14, 1932)

Pennsylvania Grade Oil in National Transit Lines:
Group A $1.77
Includes Cochran, Franklin, Hamilton and Doolittle districts.
Group B 1.76
Includes Titusville district.
Group C 1.75
Includes Turkey and Tidiout districts.
Group D 1.74
Includes Bear Creek and Porkey districts.
Group E 1.73
Includes Eidenau, Bull Creek, Rough Run, Carbon, Dipner, Bredin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacy and Kinsua districts.
Price depends on length of pipe line haul to plant at Oil City.

Tide Water Pipe Co.
(Effective March 14, 1932)

Bradford, Pa. $1.82
Allegany, N. Y. 1.82

Pure Oil Co.
(Effective December 16, 1931)

Cabin Creek, W. Va. $1.45
Bradford Hollow, W. Va. 1.45
Kelly's Creek, W. Va. 1.45

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchison Counties.....See gravity table

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Iles, light (Aug. 24, 1931) ..... $ .75
Iles, heavy (Aug. 24, 1931) ..... .53
Fort Collins (Nov. 3, 1931) ..... .71
Florence (Nov. 3, 1931) ..... .65
Wellington (Nov. 3, 1931) ..... .61
Dutton Creek (Nov. 3, 1931) ..... .75
Rock Creek, Wyo. (Nov. 3, 1931) ..... .85
Frannie, light (Nov. 3, 1931) ..... .61
Frannie, heavy (Nov. 3, 1931) ..... .51
Salt Creek.....Mid-Continent gravity table
Big Muddy (Nov. 3, 1931) ..... .85
Grass Creek (Nov. 3, 1931) 1.05
Elk Basin (Nov. 3, 1931) 1.05
Lance Creek (Aug. 24, 1931) 1.05
Poison Spider (Mar. 5, 1931) ..... .70
Notches (Mar. 14, 1927) ..... .85
Hudson (June 2, 1931) ..... .85
Lander (Mar. 5, 1931) ..... .40
Rex Lake (Feb. 22, 1930) 1.10
Osage (Apr. 15, 1931) ..... .93
Lost Soldier (Nov. 3, 1931) ..... .69
Hamilton Dome (Nov. 3, 1931) ..... .45
Greybull (Nov. 3, 1931) 1.05
Cat Creek (Nov. 3, 1931) 1.05
Pondera (Nov. 3, 1931) ..... .90
Sunburst, Mont. (Nov. 3, 1931) 1.00
Hogback, N. Mex. (Aug. 24, 1931) ..... .80
Lea County, N. Mex. (Nov. 3, 1931) ... .50
Border, Mont. 1.55
Red Coulee, Alberta 1.55
Lea County, N. Mex. (Apr. 1, 1932)*.. .65
Dry Creek, Mont. (Aug. 24, 1931) 1.00
Maljamar (Nov. 3, 1931) ..... .45

(Continued on Page 70)

CRUDE OIL GRAVITY TABLE

	Kansas and Oklahoma	North and Central Texas	East Central Texas	Gray County, Texas	Carson and Hutchinson Counties, Texas	Salt Creek, Wyoming	North Louisiana and Arkansas	Gulf Coast (Texas and Louisiana)	Cameron Meadows, Louisiana
Below 25 degrees	...	...	.67	...	...	...	...	.80	.60
25-25.9 degrees	...	...	.67	...	...	...	...	.81	.60
26-26.9 degrees	...	...	.67	...	...	...	...	.82	.61
27-27.9 degrees	...	...	.67	...	...	...	...	.83	.62
28-28.9 degrees	...	...	.76	...	...	...	...	.84	.63
Below 29 degrees	.76	.76	...	...	...	.61	.61	...	...
29-29.9 degrees	.78	.78	.78	...	...	.63	.63	.85	.64
30-30.9 degrees	.80	.80	.80	...	...	.65	.65	.86	.65
31-31.9 degrees	.82	.82	.82	...	...	.67	.67	.87	.66
32-32.9 degrees	.84	.84	.84	...	...	.69	.69	.88	.67
33-33.9 degrees	.86	.86	.86	...	...	.71	.71	.89	.68
34-34.9 degrees	.88	.88	.88	.76	.66	.73	.73	.90	.69
35-35.9 degrees	.90	.90	.90	.78	.68	.75	.75	.91	.70
36-36.9 degrees	.92	.92	.92	.80	.70	.77	.77	.92	.71
37-37.9 degrees	.94	.94	.94	.82	.72	.79	.79	.94	.72
38-38.9 degrees	.96	.96	.96	.84	.74	.79	.81	.96	.73
39-39.9 degrees	.98	.98	.98	.86	.76	.79	.83	.98	.74
40 degrees and over	1.00	1.00	1.00	.88	.78	.79	.85	1.00	.75

Note—Magnolia Petroleum Co.'s prices in Oklahoma, North Texas and Central Texas, and East Central Texas, effective April 1 are the same as those given in Columns 1 and 2 excepting that the schedule begins with below 28 degrees 67 cents and 28-28.9 degrees 76 cents. The Empire Pipe Line Co. met the Magnolia prices in Kansas and Oklahoma and the White Eagle Oil Corp. in Kansas.

Column 1—Continental Oil Co., effective April 1, 1932, in Oklahoma and Kansas; Sinclair Refining Co., Barnsdall Refineries, Inc., and Standish Oil Co. in Oklahoma and Kansas; Skelly Oil Co., Kanotex Refining Co., Derby Oil Co., Vickers Petroleum Co. in Kansas; Magnolia Petroleum Co. (see note above) in Oklahoma; White Eagle Oil Corp. (see note above) in Kansas; The Texas Company in Oklahoma. The following companies had not changed their prices made November 2, 1931: Stanolind Crude Oil Purchasing Co., Gypsy Oil Co. and Carter Oil, which are 15 cents or lower on all degrees.

Column 2—Continental Oil Co., effective April 1, in North Texas only; followed on same day by The Texas Company in North and Central Texas, Magnolia Petroleum Co. (see note above). The Humble Oil & Refining Co., Gulf Pipe Line Co. and Stanolind Crude Oil Purchasing Co. had not changed their prices made effective November 2, 1931, which are 15 cents lower on all degrees.

Column 3—Magnolia Petroleum Co., effective April 1. Humble Oil & Refining Co. prices 15 cents lower on all grades as per its schedule, effective November 2, 1931.

Column 4—Magnolia Petroleum Co., effective April 1, 1932. Philtex Oil Co. on April 2 met these prices but carried its schedule down to below 30 degrees at 66 cents with a 2-cent increase for each degree upward. Other companies paying old schedule, effective November 2, which is 15 cents lower than Magnolia on all degrees.

Column 5—Magnolia Petroleum Co., effective April 1, followed by Philtex Oil Co. on April 2, excepting that the latter company carried its schedule below 30 gravity at 56 cents, with 2 cents added for each degree upward.

Column 6—Midwest Refining Co., November 2, 1931.

Column 7—Standard Oil Co. of Louisiana, effective November 4, 1931; Gulf Refining Co. and Louisiana Oil Refining Co. On April 1, 1932, The Texas Company posted a 15-cent increase on each degree in the schedule, effective in North Louisiana only.

Column 8—The Texas Company, effective April 1, 1932. All other purchasers paying old schedule of prices effective November 2, 1931, which are from 10 to 14 cents lower.

Column 9—Magnolia Petroleum Co.

TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns April 5.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Chicago	15.0	15.5	3.0	9.0
Decatur, Ill.	15.5	15.5	3.0	9.1
E. St. Louis	14.8	14.8	3.0	8.3
Joliet	15.5	15.5	3.0	9.1
Peoria	15.5	15.5	3.0	9.1
Quincy	15.3	14.2	3.0	8.9
Davenport, Ia.	15.6	15.6	3.0	9.4
Des Moines	15.6	15.6	3.0	8.1
Keokuk	15.6	15.6	3.0	6 4
Sioux City	15.2	15.2	3.0	9.0
Duluth, Minn.	16.6	16.6	3.0	10.0
Mankato	16.2	16.2	3.0	8.1
Minneapolis	16.3	16.3	3.0	10.0
LaCrosse, Wis.	17.3	17.3	4.0	10.1
Milwaukee	16.2	16.2	4.0	9.0
Madison	16.4	16.4	4.0	9.2
Detroit, Mich.	12.5	12.5	3.0	9.1
Grand Rapids	14.8	14.8	3.0	10.5
Saginaw	13.2	13.2	3.0	10.5
Evansville, Ind.	16.2	15.6	4.0	10.1
Indianapolis	16.3	16.3	4.0	10..
South Bend	16.8	16.8	4.0	8.1
Fargo, N. D.	18.0	18.0	3.0	12.0
Huron, S. D.	17.4	16.0	4.0	10.8
Sioux Falls	16.9	16.9	4.0	10.5
K. C., Mo.	15.0	15.0	3.0	7.7
Springfield*	15.0	15.0	3.0	7.0
St. Louis*	14.5	14.5	3.0	8.4
St. Joseph	14.6	14.6	3.0	7.6
Wichita, Kans.	13.9	13.9	3.0	6.1
Bartlesville, Ok.	13.1	15.1	4.0	7.1

*State tax 2 cents, remainder city tax.

A third grade of gasoline, "Stanolind Blue," is sold at all major points at a price 1½ cents or more below the price on the regular grade.

Effective November 4—New dump discount applicable on all grades of gasoline sold from tank wagon. Any tank wagon customer buying 25 gallons or more at one time will be given 1-cent discount per gallon off tank wagon price at time of delivery. Customers not under contract receive no other discount.

Effective January 1—Discounts on Q.D.A. on 500 gallons or more per month throughout territory; Red Crown Ethyl Gasoline, 2 cents off tank wagon price; Red Crown gasoline, 2½ cents off tank wagon price; Stanolind Blue gasoline, 1 cent off tank wagon price. On deliveries of 75,000 gallons or more each classification allowed 1 cent additional discount.

Discounts on resellers authorized agent's agreement: Same amounts as above except made off service station price instead of tank wagon price.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Dallas, Tex.	16.0	17.0	4.0	9.0
Fort Worth	16.0	17.0	4.0	8.0
Houston	13.0	16.0	4.0	9.0
San Antonio	15.0	17.0	4.0	8.0
El Paso	14.0	16.0	4.0	11.0
Texarkana	*16.5	16.5	4.0	10.0
Muskogee, Ok.	11.0	13.0	4.0	8.0
Okla. City	13.0	15.0	4.0	8.0
Tulsa	13.0	15.0	4.0	8.0
Ft. Smith, Ark.	*17.0	17.0	5.0	†11.0
Little Rock	*18.0	18.0	6.0	†11.0

One-cent rebate made from posted station prices to cash purchasers in Louisiana, Arkansas and Tennessee.

*Less 2½ cents to dealers. †Less 2 cents to dealers.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Denver, Colo.	15.0	18.0	4.0	12.5
Pueblo	15.0	18.0	4.0	12.0
Grand Jctn.	19.0	22.0	4.0	14.5
Casper, Wyo.	15.0	18.0	4.0	10.0
Cheyenne	14.0	17.0	4.0	11.5
Butte, Mont.	17.0	20.0	5.0	16.0
Billings	18.0	21.0	5.0	14.5
Great Falls	21.0	23.0	5.0	16.0
Helena	20.0	23.0	5.0	16.0
Salt Lake, Utah	17.5	20.5	4.0	16.0
Albu'que, N. M.	14.0	17.0	6.0	14.0
Boise, Idaho	21.0	24.0	5.0	18.0
Twin Falls*	19.0	22.0	5.0	18.0

*Two-cent discount off tank wagon to dealers.

OHIO

Standard Oil Co. (Ohio)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Ohio points	16.5	17.0	4.0	*13.0

Dealers and commercial accounts 2 cents under tank wagon.

*Service station price 13 cents.

PENNSYLVANIA-DELAWARE AND PART OF NEW ENGLAND

Atlantic Refining Co.

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Pittsburgh, Pa.	16.0	17.0	3.0	11.0
Philadelphia	15.0	16.0	3.0	11.0
Scranton	16.0	17.0	3.0	11.0
Allentown	16.0	17.0	3.0	11.0
Altoona	16.0	17.0	3.0	11.0
Erie	16.0	17.0	3.0	11.0
Dover, Del.	16.0	17.0	3.0	11.0
Wilmington	16.0	17.0	3.0	11.0
Springf'd, Mass.	14.3	15.3	3.0	8.5
Worcester	15.8	16.8	3.0	8.5
Boston	15.0	16.0	3.0	9.5
Providence, R.I.	14.0	15.0	3.0	8.5
Hartford, Conn.	15.0	16.0	2.0	10.0
New Haven	15.1	16.1	2.0	10.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atlanta, Ga.*	19.5	19.5	6.0	9.0
Augusta	20.0	21.0	6.0	14.0
Macon	17.0	18.0	6.0	12.0
Savannah	18.0	19.0	6.0	11.0
Birm'ham, Ala.	20.5	20.5	6.0	12.0
Mobile	20.0	20.0	5.0	10.0
Montgomery	21.5	21.5	6.0	13.5
Jackson, Miss.	18.0	18.0	5.5	10.0
Vicksburg	18.0	18.0	5.0	8.0
Jack'ville, Fla.	20.0	20.0	7.0	10.0
Miami	21.0	21.0	7.0	13.0
Pensacola	21.0	21.0	7.0	13.0
Tampa	20.0	20.0	7.0	11.0
Lexington, Ky.	17.0	18.0	5.0	10.0
Covington	17.0	18.0	5.0	10.0
Louisville	16.5	17.5	5.0	10.0
Corbin	18.0	19.0	5.0	15.0

A third grade "Kyso Green" is sold at a price generally 2 cents below the price on the regular grade.

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. To Pensacola, Montgomery and Birmingham state taxes add 1-cent levy tax. To Gulfport state tax add privilege tax of 2 cents. To Mobile state tax add 1-cent city tax and 2½ cents county tax.

Effective April 2 price to dealers 2 cents under posted tank wagon price.

*An additional discount of 1 cent is offered to dealers effective October 6.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Atl'tic City, N.J.	16.2	16.7	3.0	11.5
Newark	15.2	15.7	3.0	8.5
Annapolis, Md.	16.7	17.2	4.0	10.0
Baltimore	15.9	16.4	4.0	8.0
Cumberland	17.7	18.2	4.0	12.0
Wash'g'n, D. C.	15.4	14.9	2.0	10.0
Danville, Va.	18.5	19.0	5.0	11.8
Norfolk	17.0	17.5	5.0	10.3
Petersburg	18.0	18.5	5.0	11.3
Richmond	17.0	18.0	5.0	10.7
Roanoke	18.7	19.2	5.0	12.0
Charles'n, W.Va.	17.2	17.7	4.0	11.5
Parkersburg	15.9	16.4	4.0	10.2
Wheeling	17.1	17.6	4.0	11.4
Charlotte, N. C.	19.5	20.0	6.0	10.7
Hickory	20.3	20.8	6.0	12.6
Mt. Airy	20.2	20.7	6.0	12.5
Raleigh	19.9	20.4	6.0	12.2
Salisbury	19.0	19.0	6.0	12.5
Charleston, S.C.	18.0	18.5	6.0	10.3
Columbia	19.9	20.4	6.0	12.2
Spartanburg	20.2	20.7	6.0	12.5

Two and one-half cents per gallon discount off tank wagon price of gasoline to dealers except Washington, D. C., and States of Maryland and New Jersey, where discount is 2½ cents.

Prices shown above are for standard gasoline.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Albany, N. Y.	15.5	16.5	3.0	9.5
New York*	14.0	16.0	3.0	9.0
Buffalo	15.5	16.5	3.0	8.5
Rochester	15.5	16.5	3.0	8.5
Syracuse	17.3	17.3	3.0	9.0
Boston, Mass.	15.0	16.0	3.0	8.5
Augusta, Me.	17.3	18.3	4.0	9.0
Manch'tr, N. H.	16.9	17.9	4.0	8.5
Burlington, Vt.	17.8	18.8	4.0	9.5

*Prices in steel barrels.

PACIFIC COAST TERRITORY

Standard Oil Co. of California*

	Gasoline			Kero.
	Tank truck	Posted retail	Incl'ds tax	tank wagon
Fresno	12.5	16.5	3.0	17.0
San Francisco	12.5	16.5	3.0	15.5
Los Angeles	12.0	16.0	3.0	15.5
Reno, Nev.	16.0	20.0	4.0	19.0
Portland, Ore.	14.0	14.0	4 0	16.5
Seattle, Wash.	15.0	15.0	5.0	16.5
Tacoma	15.0	15.0	5.0	16.5
Spokane	18.5	20.0	5.0	20.5
Phoenix, Ariz.	14.5	17.0	5.0	20.0

Above prices are at company's plant or depots as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

*Retail prices posted by Standard Stations, Inc., a subsidiary.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
N. Orleans, La.	17.5	17.5	6.0	†10.0
Baton Rouge	17.0	17.0	5.0	†12.0
Alexandria	17.5	17.5	6.0	10.0
Lafayette*	16.0	16.0	6.0	†10.0
Lake Charles*	17.5	17.5	6.0	†12.0
Shreveport	15.0	15.0	5.0	†12.0
Knoxville, Tenn.	21.5	21.5	7.0	13.5
Memphis	19.5	19.5	7.0	11.0
Chattanooga	21.0	21.0	7.0	11.0
Nashville	20.5	20.5	7.0	12.5
Bristol	20.0	20.0	7.0	14.0
Lt. Rock, Ark.	18.0	18.0	6.0	11.0

*Includes city tax of 1 cent. Louisiana kerosene prices include 1-cent state tax. New Orleans kerosene price also includes 1-cent city tax.

†Kerosene prices in Louisiana include 1 cent tax except New Orleans where tax is 2 cents.

Two-cent discount off gasoline and kerosene tank wagon price to dealer and commercial accounts.

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline			Kero.
	Tank wagon	Service station	Incl'ds tax	tank wagon
Omaha	14.9	15.9	4.0	9.25

(Continued on Page 74)

CRUDE OIL PRICE CHANGES

Effective April 1, 1932, the Continental Oil Co. advanced all grades of crude 15 cents per barrel in Kansas, Oklahoma and North Texas. Similar action was taken in these and other areas by other buyers, excepting the Stanolind Crude Oil Purchasing Co., Carter Oil Co., Humble Oil & Refining Co. and Gypsy Oil Co. Details of the increase, which also affected Central Texas, East Central Texas, East Texas, West Texas, Texas Panhandle, Southwest Texas, Lea County, New Mexico, Gulf Coast, North Louisiana and Smackover, Arkansas, will be found on Page 24 and in the crude price tables on Pages 68 and 69.

TANK WAGON CHANGES

Standard Oil Co. of Kentucky advanced the gasoline tank wagon and station prices in Louisville, Ky., to 16½ and 17½ cents on March 25. On March 23 the kerosene tank wagon price was reduced to 11 cents in Tampa, Fla. On April 1 the Tampa gasoline tank wagon and station prices were advanced to 18

(Continued on Page 76)

CRUDE OIL PRICES

(Continued from Page 69)

Artesia-Jackson (Nov. 3, 1931) ..... .50

Note—Salt Creek, Cat Creek, Dry Creek, Dallas-Derby, Hudson, Greybull and Hogback posted by Midwest Refining Co. and remainder by Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Border and Red Coulee posted by Imperial Refining Co. Lea County posted by Humble Oil & Refining Co. Fort Collins, Wellington, Orchard, Florence, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro Oil & Refining Co.

*Posted by The Texas Company.

WEST TEXAS

Iatan and Westbrook..Same as North Texas
Crane, Upton, Crockett, Howard, Glasscock, Mitchell, Ector, Winkler and Pecos Counties* ..... $ .64
Crane, Upton, Crockett, Howard, Glasscock, Ector, Winkler and Pecos Counties‡ ..... .50
Lea County, N. Mex.‡ ..... .60
Toborg, Pecos County, Aug. 25, 1931† ..... .35

*Effective April 1, 1932, Magnolia Petroleum Co., The Texas Company. †Shell Petroleum Corp. ‡Humble Oil & Refining Co., November 2, 1931. The Texas Company increased Lea County crude oil to 65 cents on April 1, 1932. ‖Humble Oil & Refining Co., Gulf Pipe Line Co.

GULF COAST

Grade A and Grade B classifications discontinued by leading buyers. .... See gravity table
Jennings, La. (Nov. 2, 1931)* ..... $ .45
Lockport, La. (Aug. 27, 1931)† .... See Gulf Coast gravity table
Refugio, light ..... See gravity table
Refugio, heavy (Nov. 2, 1931)‡ ..... .75
Markham (Nov. 2, 1931)‖ ..... .67
High Island (Nov. 2, 1931)¶ ..... .65

*Gulf Refining Co. †Magnolia Petroleum Co. ‡Humble Oil & Refining Co. ‖The Texas Company. ¶Gulf Pipe Line Co.

NORTH LOUISIANA AND ARKANSAS

Smackover, Ark. (all grades) (Nov. 4, 1931) ..... $ .55
Smackover, Ark. (all grades) (Apr. 1, 1932* ..... .65
Urbana, Ark. ..... See note below
Bellevue, La. (June 3, 1931) ..... .35
Uranis, La. (Nov. 2, 1931) ..... .50
Calion, Ark. (Aug. 22, 1931) ..... .52
East El Dorado, Ark. (Nov. 4, 1931) .. .55
Stephens, Ark., below 29° (Aug. 24, 1931) ..... .41
Stephens, Ark., 29° and above (Aug. 24, 1931) ..... .44
Other fields ..... See gravity table

Note—Smackover, all grades, Standard Oil Co. of Louisiana, The Texas Company, Gulf Refining Co., Magnolia Petroleum Co., Bellevue posted by Magnolia Petroleum Co.; Uranis by H. L. Hunt, Inc., and Louisiana Oil Refining Co.; Calion by Gulf Refining Co.; East El Dorado by Gulf Refining Co. and Magnolia Petroleum Co.; Stephens, Ark., by Louisiana Oil Refining Co. and Atlantic Oil Producing Co. *Posted by The Texas Company, April 1.

SOUTH CENTRAL AND SOUTHWEST TEXAS

Darst Creek (Apr. 1, 1932)* ..... $ .75
Luling (Apr. 1, 1932)* ..... .64
Mirando (Apr. 1, 1932)* ..... .95
Pettus (Nov. 2, 1931)‡ ..... .85
Salt Flat (Nov. 2, 1931)* ..... .60
Thrall‖ ..... .
Lytton Springs (Lockhart) (Apr. 1, 1932)* ..... .94
Dobrowolski¶ ..... .
Same as Mid-Continent gravity scale up to and including 38-38.9°.
Somerset¶ ..... .
Same as Mid-Continent gravity scale up to and including 38-38.9°.

*Magnolia Petroleum Co., The Texas Company. Other buyers pay November 2, 1931, scale of prices. ‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight. †Grayburg Oil & Refining Co., Pioneer Oil & Refining Co. and Texas Petroleum Products. ‖Pioneer Oil & Refining Co. ‡Humble Oil & Refining Co.

MIDDLE WESTERN STATES
Ohio Oil Co.
(Effective November 3, 1931)

Lima $1.00
Wooster 1.15
Illinois ..... .95
Indiana ..... .90
Princeton ..... .95
Plymouth ..... Shut in
Western Kentucky ..... .90
Midland, Mich. (Oct. 9, 1931)* ..... .55
Dundee, Mich.† ..... .
Same as Stanolind Crude Oil Purchasing Co.'s Mid-Continent gravity scale
Upper and Lower Traverse Sands, Mich.† ..... Same as Mid-Continent gravity scale
Somerset, Ky. (Nov. 4, 1931) ..... .80
Hart County, Ky. (Jan. 13, 1932)‖ ..... .60

*Posted by Pure Oil Co. †Posted by Standard of Indiana for boat shipment. ‖Posted by Stoll Refining Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and delivered through own pipe line.

MEXICO

Panuco* ..... $ .65

*F.o.b. ship, based on February transactions and exclusive of production and export taxes and bar dues.

CANADA

Ontario (Nov. 3, 1931):
Petrolia* $1.90
Oil Springs* 1.97
Alberta (Aug. 24, 1931):
Turner Valley†:
Crude oil 45-45.9 ..... 2.01
Crude oil 50 and above 2.05
Crude naphtha 2.13
Discolored naphtha 2.03

*Imperial Oil, Ltd. †Imperial Oil, Ltd. and Regal Oil & Refining Co.

Of Interest to Sales Departments

February Exports of Oil Products in 1932 Show Marked Decline

By C. E. Kern

Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Apr. 4.—The value of exports of petroleum products decreased from $24,220,279 in February, 1931, to $17,319,370 in February of this year, and the decrease in value for the first two months of this year was from $53,711,355 to $35,140,503, according to the monthly summary, Bureau of Foreign and Domestic Commerce.

Crude oil exports for February increased from 1,710,296 bbls. valued at $1,794,902 in February, 1931, to 1,896,682 bbls. valued at $1,751,445 in February of this year. Of the total exports of crude oil in February 1,167,828 bbls. went to Canada, a decline from 1,398,127 bbls. in February, 1931.

All refined oil exported declined from 7,320,213 bbls. valued at $20,785,798 in February, 1931, to 5,440,011 bbls. valued at $14,561,957 in February of this year. Gasoline, naphtha and other light products exported declined from 3,586,221 bbls. valued at $10,604,224 in February. 1931, to 2,832,948 bbls. valued at $7,033,180 in February, 1932.

Of the exports of gasoline in February 2,723,526 bbls. were exported in bulk. Exports of gasoline to the United Kingdom in bulk decreased from 1,242,810 bbls. in February, 1931, to 718,432 bbls. in the same month of this year. Exports of gasoline in bulk to Germany decreased from 52,155 to 46,634 bbls.; to France, from 514,607 to 318,767; to the Netherlands, from 65,986 to 63,311; to Canada, from 180,565 to 168,269; to China, from 64,098 to 32,521; to Australia, from 310,274 to 261,547 bbls. Japan received American gasoline in February, 1932, to the extent of 78,874 bbls.

Increases in gasoline exports were recorded in the case of the Irish Free State from 31,424 bbls. in February, 1931, to 33,694 bbls. in the same month of this year. Exports to Spain increased from 48,286 to 64,189 bbls.; the Philippines, from 65,950 to 100,780 bbls.; New Zealand, from 31,600 to 106,016.

Gasoline exports in containers decreased from 217,394 bbls. in February, 1931, to 109,692 in the same month of this year.

Kerosene exported decreased from 974,399 bbls. in February, 1931, to 783,870 in the same month of this year, of which 713,043 bbls. went in bulk in 1931 and 625,164 bbls. in bulk this year.

Gas oil and distillate fuel oil exports declined from 2,204,064 bbls. in February, 1931, to 850,289 in February, 1932. Fuel and bunker oil for vessels in foreign trade not included in domestic exports decreased from 3,621,560 bbls. in February, 1931, to 3,136,043 in February. 1932. Lubricating oil exports increased from 549,738 bbls. in February, 1931, to 592,005 in the same month of this year.

Exports of lubricating greases decreased from 5,978,823 bbls. in February, 1931, to 4,495,344 in February, 1932. Paraffin wax exports decreased from 23,502,544 pounds in February, 1931, to 17,504,561 in February of this year. Of the paraffin wax exported in February of this year 5,895,967 pounds was unrefined and 11,608,594 pounds refined.

FORM CREDIT DIVISION

PHILADELPHIA, Pa., Apr. 2.—At a meeting to be held next week under the auspices of the Philadelphia Association of Credit Men, a division for local refiners and distributors of petroleum and its products will be organized. Preliminary meetings have already been held.

IMPERIAL ISSUES STATEMENT REGARDING CANADIAN PRICES

NEW YORK, Apr. 2.—Canadian refiners who are endeavoring to operate at a profit, see no parallel between the petroleum situation in the Dominion and that existing in the United States, where products are selling at "bankrupt prices," and therefore welcome the present government investigation of gasoline prices to justify their position, says Imperial Oil, Ltd., in a statement on the investigation.

"To say that Imperial Oil, Ltd., 'welcomes' an inquiry into gasoline prices by the Banking and Commerce Committee of the House of Commons may be overstating the case," says the statement. "No enterprise that is making every effort to carry on in the most economical and efficient manner in the face of difficulties greater than have ever before confronted business, can welcome the extra effort and expense incidental to analyzing records and securing the volume of information which will probably be asked for. Nevertheless, Imperial Oil, Ltd., is willing now, as it has always been, to expose its business to the closest scrutiny by competent and fair-minded investigators and will render all assistance in its power to enable the committee to arrive at any relevant facts.

"What Imperial Oil will welcome will be the beneficial results which are expected to follow the explanation of gasoline prices in Canada. It is no secret to anyone in the industry that the company is operating on a price structure that does not afford an adequate return on its invested capital. The investigation will make this fact more widely known.

"The Banking and Commerce Committee, in whose hands the investigation rests, consists of 50 members of the House of Commons. This should be a sufficient number to procure any necessary information. It is possible, though we do not believe probable, that the public may be treated to some feasts of oratory of the kind that are occasionally indulged in when a large parliamentary committee representing many divergent interests finds itself in the position of the fabled knight assaulting the mythical dragon of corporate greed. In other words, the proceedings may be enlivened by occasional speeches which will make up in fervor for any deficiency in fact. But facts, not charges, will influence the committee's report. This report the company awaits with confidence that it will dispel a great deal of the misunderstanding created by comparisons of bankrupt prices prevailing in demoralized oil fields in the United States with prices maintained in Canada where there is no overproduction of oil, where the refiners see no reason to operate at a loss and where gas tax evasion has not become a baneful influence on the price structure.

"Press comments on the investigation indicate that the public will welcome a full disclosure of the facts."

ACCUSED OF VIOLATING GASOLINE LABEL RULE

OKLAHOMA CITY, Okla., Apr. 4.—Two more filling station operators have been cited to appear before the Corporation Commission April 13 on charges of selling inferior motor fuel without proper labels. The charges bring to light complaints instituted by E. D. Graham, commission chemist. He filed citations against six city filling station operators last week.

The new regulations require labels such as "inferior motor fuel," or "off specifications," on gasoline which fails to meet state standard.

RE-ELECT RAGLE PRESIDENT

H. H. Ragle, who has been president and executive head of the Michigan Independent Oil Men's Association for several years was re-elected president of the association at the annual meeting held last week at Detroit. Other officials also were re-elected. Approximately 600 distributors in the state attended the three-day meeting.

MUST PAY GASOLINE TAX FOR WORK ON WOODPILE

OKLAHOMA CITY, Okla., Apr. 4.—Farmers who move their tractors from the fields to the barnyard to saw wood are liable for the 4-cent state gasoline tax on fuel thus consumed, gasoline dealers are informed today by the state tax commission.

E. W. Simons of Enid, speaking for the Eason Oil Co., one of the 30 or so companies represented, said 19 affidavits from farmers using their tractors for sawing wood had been returned by the commission with a demand for payment of the tax.

PLAN TO LOWER HAZARD OF HARBOR OIL FIRES

LOS ANGELES, Calif., Apr. 4.—Uniform regulations for the handling and storage of petroleum products in Los Angeles harbor as a means of reducing fire hazards to a minimum are being jointly drawn up by the harbor and fire departments.

Under this plan all petroleum products having a flashpoint below 187° F. would be restricted as to areas of storage or handling on docks, except at the municipal case oil terminal and at specially constructed oil-loading terminals. Further, no public docks would be designated for handling of petroleum products having a flashpoint below 100° F. except by special permission of the fire department. Overnight storage of inflammable products, loading, discharge or mooring of oil or explosive barges within the port proper would also be restricted and tankers in port would be required to keep their deck scupper pipes closed.

LATVIA FAVORS ALCOHOL

All motor fuel sold in Latvia must by decree now contain 25 per cent by volume of alcohol purchased from the government alcohol monopoly. In addition to this step, as an aid to the agricultural industry, the Latvian government is reported to have under consideration the establishment of a monopoly in motor spirit.

SPAIN MAY TAX GASOLINE

NEW YORK, Apr. 4.—A ministerial decree of the Spanish government authorizes the introduction in the Cortes of a bill for increasing import duties on various products and including a provision for a temporary excise tax of 0.10 peseta per liter on gasoline. At last reports this proposal had not yet been enacted into law.

PROPOSED ALBERTA LAW AIMED AT TAX EVADERS

CHATHAM, Ontario, Apr. 4.—A measure designed to curb fuel oil and gasoline bootlegging has been introduced by the Alberta provincial government. This measure, the Fuel Oil Tax Act, continues the previous tax of 5 cents an imperial gallon on gasoline, but makes it applicable to fuel oil also. Rebates of 4 cents a gallon are allowed for tractor, municipal and industrial purposes other than the operation of motor vehicles.

Under the act jobbers, wholesalers and retailers of fuel oil are required to obtain licenses within 30 days, a license being required for each separate filling station or other place where gasoline is sold. Unlicensed corporations who may deal in gasoline are subject to a penalty as high as $2,000 plus $100 a day for every day they continue in business; while other persons who illicitly deal in fuel oil are subject to $1,000 fine and costs or six months' imprisonment. The same penalty is imposed on tax evaders, and any person importing fuel oil for any purpose or receiving gasoline from an unlicensed dealer is required to make a return to the government and to pay the tax.

In addition to providing drastic penalties, the act puts the burden of proof upon the defendant. The widening of the scope of taxation to "fuel oil" instead of merely gasoline is designed to include various untaxed products that have been used in place of gasoline.

GOVERNMENT CONTRACTS

NEW YORK, Apr. 2.—Among recent government contract awards for refined petroleum products were the following: To Sinclair Refining Co., 21,000 gallons of motor gasoline at 7 cents per gallon, for delivery to Quartermaster, West Point, N. Y.

To A. D. Miller Sons Co., Pittsburgh, 3,500 gallons of kerosene at 7½ cents, 3,500 gallons of motor gasoline at 7½ cents, and 10,000 gallons of Ethyl gasoline at 10 cents per gallon, all for delivery to the U. S. Engineer at Pittsburgh.

To Sinclair Refining Co., 8,000 gallons of lighthouse "B" engine oil at 17.75 cents per gallon, for delivery to Lighthouse Bureau, Staten Island, N. Y. Contracts for varying quantities of gasoline for delivery to the Army Quartermaster at St. Louis have been awarded to Deep Rock Oil Corp., Chicago, at 7.52 cents per gallon, Mid-Continent Petroleum Corp., Tulsa, at 5.32 cents per gallon, and to Continental Oil Co., Ponca City, at 9 cents per gallon and 10 cents per gallon.

GASOLINE FUEL ON MAIN LINE

CHICAGO, Apr. 4.—A new phase in railroading has been entered on the Chicago Great Western Railroad with the adoption of a gasoline electric motor car in long-distance main line service. Its regular run of 246 miles between Chicago and Oelwein, Iowa, with a round trip of 492 miles every 24 hours, is one of the longest continuous runs ever established for any rail motor car. By substituting for steam trains, the car will bring about a substantial saving. It is capable of 63 miles an hour and will cut running time.

ONTARIO GASOLINE TAX

CHATHAM, Ontario, Apr. 2.—The increase in the provincial gasoline tax in Ontario from 5 to 6 cents per imperial gallon became effective on March 24. Certain exemptions are allowed to farmers, fishermen and municipal service. The commission on collections allowed oil companies, previously 2 per cent, was reduced to 1.6 per cent.

NEED OF MORE POOLS IS BECOMING APPARENT

(Continued from Page 15)

dustry. This vacation in drilling cannot be continued much longer if new pools and reserves are to be found in time to insure the industry an ample daily supply of oil. Finding of new fields does not imply that they must immediately be placed upon mass production. In fact, it would be well for the industry if fields were produced at rates based upon the age of the field.

Such a priority arrangement would permit the older fields to be operated without rsetrictions. More recently drilled fields would be allotted their share of the required production upon the basis of age of the field and under such an arrangement restriction as to daily allowable per well would be set up and this would permit the operators so to adjust their operations as to obtain the maximum quantity of oil from their leases.

The price of oil should be high enough to insure all operators a fair profit and take into account long period depreciations of capital investments, rather than permit operations upon the principle that as soon as an oil well is completed it should be produced wide open so that the investor could get his money back immediately. It is clear that the competitive method of production has been the basic cause of periods of overproduction, is not fundamentally sound and on the whole has caused low prices and earnings on investments, even though a few wells have paid out quickly.

A survey of the production branch of the industry at this time indicates that the "critical production" rate of all fields in this country just about balances current demand for oil to run to the stills. This condition was set forth in an article in the February 18 issue of The Oil and Gas Journal, page 17, with a table of estimated daily production and requirements for the summer of 1932.

Oklahoma City Field

The two important fields from which it is expected additional oil can be obtained if needed are Oklahoma City and East Texas. All other areas in this country are either now producing unrestricted and making all the oil they are capable of producing, or are under some form of control that insures their maximum output for the summer being approximately that estimated in the table referred to.

In that table Oklahoma City was assigned 200,000 bbls. of oil daily, while East Texas oil fields were placed at 300,000 bbls. At this time the Oklahoma City Field is actually making about 111,705 bbls., as of March 26, while East Texas reports a production of 327,746 bbls. for the week of March 26.

In order that some idea of the available oil for the summer of this year may be estimated a study of producing conditions in the Oklahoma City Field will be considered. This field now has approximately 850 producing wells which have been divided into four classes by the State Corporation Commission in accordance with the class of formation from which they are producing, and still further classified with regard to water conditions in those zones.

Four wells have been assigned to the fault line zone and they have only a small potential production and are therefore not important in the general study. All lie to the east of the great fault that marks the east edge of the major portion of the field and under any ruling could not produce enough oil materially to affect the total from the field.

The next zone is classified as the Arbuckle line area in which there are about 35 wells now capable of producing about 4,200 bbls. daily. They are limited as to total production because of water movement through that portion of the producing formation, and it has been estimated that not over 1,000,000 bbls. of recoverable oil still remains in the Arbuckle lime area. To obtain the major portion of this oil restricted production will be necessary because water is costly to handle along with the oil and effectively limits the rate of oil withdrawal. Most of the Arbuckle lime wells have been plugged back and now produce gas only.

There are about 384 wells in the Lower Simpson zone and they were given a potential production of about 1,860,000 bbls. daily by the Commission after tests run last November and December. This part of the field has been largely affected by water movement through the formation and the spread of this water in the north end of the field has been quite pronounced in the past 14 months during which time accurate water maps have been made.

Because of the rule applied to wells in the Oklahoma City Field it is estimated that during the last 14-month period these wells have been allowed to produce not to exceed 14 days total time, and this adds significance to the water movement in this area, because it has been quite steady once it has entered the stratum and has continued up and down dip from the well, and in one instance has actually fingered out over the crest of the anticline and has made its appearance in wells on the east side of the crest of the anticline.

Water has not made any considerable showing in the south end of the field in the Lower Simpson formation, perhaps largely due to the fact that drilling there was done early in the life of the field and penetration was not as deep as in wells in the north end of the field.

The method of completing wells in the Oklahoma City Field has a great deal to do with the present water movement. Early Arbuckle lime wells were cased high and a lot of open hole was left beneath the Pennsylvania formation. The penetration into the producing zones of the Arbuckle varied according to individual well characteristics as it was customary to drill until a suitable amount of oil was found and in so doing some wells actually penetrated pockets of high pressure water which was allowed to blow off before completion of the hole.

In the Lower Simpson formation, which was drilled next after the Arbuckle the drilling contractors were more cautious because they were governed largely by their experience in the older wells. Therefore the south end of the field had wells that penetrated only the three producing sands of the Lower Simpson, the Johnson, School Land and Green Shale sands, and the bottom of the holes were well above the Stampler lime or Arbuckle formation in which water later was encountered in north end wells.

As the north end of the field was drilled wells in the Lower Simpson were given more penetration and they passed completely through the Johnson sand and into the Stampler lime formation underneath. In some cases this Stampler lime stratum was eroded away and a greater thickness of Johnson sand was present, but the bottom of such wells was close to the Arbuckle lime which contained water.

This deep penetration has resulted in the extensive water movement through the Lower Simpson formation in the north end of the field and reports covering February operations in the Lower Simpson area show that of 122 wells 8 were showing no water, while 114 reported water varying from less than 2 per cent to 85 per cent. Ten wells reported between 75 and 80 per cent water, while 14 reported from 2 to 5 per cent. Fourteen wells in this area were reported as plugged back and shut off or producing gas only. These in addition to the 122 shown above.

Wilcox Sand Wells

This same report for February shows record of 10 wells producing from the Wilcox sand area as making water or plugged back. Water varies from 3 to 25 per cent. This covers about all of the water wells in the Wilcox and most of them are in the south end of the field, only three being located in the northwest section of the field where the thick producing zone is situated.

The operators in the Wilcox sand area are all in accord as to the advisability of controlled rate of production of those wells because they have in mind the experience with water in the Lower Simpson area and do not desire to set up conditions in the highly productive Wilcox sand that will cause undue water movement through it.

The following data are selected from the work of Ben E. Lindsly, United States Bureau of Mines, Bartlesville, Okla., as reported to C. C. Rae, Skelly Oil Co., Tulsa, in a paper read before the Drumright meeting of the A. P. I. last December:

Bottom hole temperature, 124° F.; bottom hole pressure, 2,300 pounds per square inch; temperature of oil at surface, 80° F.; separator pressure, 70 pounds per square inch; gas dissolved in oil underground, 885 cubic feet per barrel; gas dissolved in oil at separator, 28 cubic feet per barrel; gravity of oil, 40° Be. at 60° F.; viscosity of oil, 41 seconds Saybolt 100° F.; amount gas per barrel of oil at 1,100 pounds, 430 cubic feet.

From the foregoing data it can be shown that a few hundred million barrels of oil underground can set free large volumes of gas on pressure decline. This is one factor which may have caused increase in gas-oil ratios, and in many wells the gas volume has increased appreciably in the past year.

It therefore seems to follow that even though it is estimated that ultimately 230,000,000 bbls. of oil can still be recovered from the Oklahoma City Field by careful production of the wells, the rate of production per day for the summer of 1932 will not at any time exceed 250,000 bbls.

East Texas Field

Considering conditions in East Texas where oil has been withdrawn at the rate of about 325,000 bbls. per day over a long period, it is reported that a recent bottom-hole pressure survey of that field indicates increase in pressures, in some instances to 130 pounds over a period of about 3 months.

Bottom-hole surveys taken last summer showed loss of pressure at the rate of 7 to 21 pounds, per well, per month. During the military shutdown well pressures increased in most parts of the field, some building up at the rate of 8 pounds per well, per day. Since the field has been reopened under prorated production the rate of withdrawal has been about equal to the apparent water movement in the sands.

The most recent bottom-hole survey indicates quite clearly that this increase in pressure has been over all the field, and some wells that have been dead are now again making oil. Other wells show ability to increase their rate of production if necessary.

Several theories may be given to account for this increase in bottom-hole pressure. Drainage of energy from high pressure to low pressure zones within the field may explain this change. However, this does not seem to offer a satisfactory answer in some parts of the field where all wells have been at relatively low pressures.

It is definitely known that water does exist in the producing formation and that it lies down dip and forms practically a level line of contact at the base of the sand across the field. This water level has been originally placed at about minus 3,320 feet below sea level datum lime.

Withdrawal of oil and gas from the field creates voids within the sand and this removal of oil and gas tends to lower the pressure in the producing zones. This reduction of pressure, from any cause, will set up differentials in pressure between areas. Nature will equalize these pressure differences and all the evidence now available seems to indicate that the movement of water up dip in the producing zone is furnishing the energy to build up the bottom-hole pressures in all wells.

While the method of building up pressures may be open to discussion, it seems to be agreed that the present rate of withdrawal is correct to bring about the desired control of the field and it is the expressed opinion of most operators in the East Texas Field that it will not be desirable to increase the rate of production from this field. If the rate of production should be increased it is feared that water channeling would follow and many wells would have large proportions of water to handle in order to get their quota of oil.

With the recent increase in the crude oil price in East Texas the income from the various properties has been enhanced. It therefore seems likely that the operators there will be satisfied to continue to produce oil from this field at the rate of about 325,000 bbls. daily and by so doing increase their chances of gaining greater ultimate production.

Available Crude

With this analysis of Oklahoma City and East Texas it would now appear that the figures given in the article of February 18, already referred to, can be increased by 75,000 bbls. daily, but the Yates Pool committee has stated that the rate of production will not exceed 65,000

MORE COMPLETIONS AND NEW FIELD OPERATIONS IN MARCH

The summary of field operations in March in the fields east of California indicates that a larger number of wells were drilling in March than in February There were 77 more wells completed and at the close of the month the number of rigs and wells drilling still showed an increase of 6. The intensive development of the East Texas Field continued and in the big territory classified as East Central and East Texas, or all the area east of Fort Worth and north of the Gulf Coast Field, 406 wells were completed as against 343 in February and at the close of the month there were 277 derricks up and 280 wells drilling in the big area.

Following is the summarized report:

SUMMARY OF ALL FIELDS
WELLS COMPLETED

	Comp.	Prod.	Dry	Gas
Eastern	113	453	21	17
Central Ohio	39	155	17	13
Lima	10	110	2	4
Indiana	10	240	7	1
Michigan	8	4,015	4	0
Kentucky	41	888	7	12
Illinois	3	15	1	1
Kansas	30	7,522	6	2
Oklahoma	79	38,125	26	12
North Central Texas	57	984	29	3
E. Cent. & E. Tex.	406	29,072	25	1
East Texas gas area	3	....	2	1
West Texas	13	1,377	6	0
Panhandle Texas	7	570	1	3
Gulf Coast	43	12,407	18	0
Southwest Texas	61	2,858	31	4
North Louisiana	23	570	13	5
Arkansas	1	35	0	0
Mississippi	7	....	0	7
Wyoming	2	910	0	0
Colorado	2	27	1	0
New Mexico	4	25,206	0	0
Total March	962	125,539	217	91
Total February	885	174,303	222	99
Difference	77	48,764	5	8

RIGS AND WELLS DRILLING

	Rigs	Drlg.	Ttl.
Eastern	57	115	172
Central Ohio	21	64	85
Lima	3	15	18
Indiana	2	60	62
Michigan	50	79	129
Kentucky	9	62	71
Missouri	0	1	1
Tennessee	0	14	14
Illinois	1	20	21
Kansas	42	112	154
Oklahoma	65	248	313
North Central Texas	47	128	175
E. Cent. and E. Tex.	277	280	557
East Texas gas field	7	32	39
West Texas	26	79	105
Panhandle Texas	12	39	51
Gulf Coast	11	99	110
Southwest Texas	25	106	131
North Louisiana	34	41	75
Arkansas	8	30	38
Mississippi	7	11	18
Alabama	2	3	5
Montana	13	51	64
Wyoming	10	62	72
Colorado	10	70	80
New Mexico	8	43	51
Utah	1	19	20
Total March	748	1,883	2,631
Total February	681	1,944	2,625
Difference	67	61	6

bbls. through April and May. This is a decrease of 35,000 bbls. there, and conditions in the Seminole Field indicate that the oil that can be conservatively expected from that area will be 125,000 instead of 150,000 bbls. daily, a decrease of 25,000 bbls.

Therefore all other figures remaining the same as those given in the February 18 estimate it is apparent that the total amount of oil that can be produced under "critical production" conditions is about 2,296,160 bbls. daily. If demand is 2,400,000 bbls. daily for runs to stills during the summer months this will leave slightly more than 100,000 bbls. of oil to be made up from other than domestic well sources.

This establishes a desirable balance between available oil and actual requirements, and if future supply is considered places the industry in an excellent position again to start active prospecting for new pools because it is clear that every pool in this country is on a definite rate of decline and to make up for that condition more new pools must be found and the oil made available for production. This is not to be taken as advocating the flooding of the market with unnecessary production. It is felt that the major oil companies should take this problem of supplying new reserves upon themselves rather than permit irresponsible persons to step in and open pools for the sole purpose of getting quick returns. The industry now has matters under control and should maintain them in that condition by conservative drilling operations, because some time must elapse between starting of new operations and the actual discovery of new fields.

TEXAS PROPOSES TO METER PIPE LINES AND REFINERIES

AUSTIN, Tex., Apr. 2.—James V. Allred, attorney general, said his department would recommend to the Texas Railroad Commission that it adopt an order directing that pipe line systems in the East Texas oil field be metered.

Allred said the meters should act as a check against unfair and excess production, and as an aid to checking on gross production and gasoline tax evasions.

Fred Upchurch, assistant attorney general, acting as a legal advisor to the commission, said the meters would furnish not only the Railroad Commission but other state agencies with data now only partially available on production.

A plea for the commission to have pipe lines metered was made to it at its proration hearing by Clifford Mooers, representing the Longview Chamber of Commerce and other East Texans.

The tentative order, outlined in the suggestion of the Attorney General's Department, would be for the installation of meters on the so-called trunk pipe lines at some point outside the production area, on the end of the gathering lines before the oil goes into the trunk line, at the end of lines leading to loading racks and at the end of lines leading to refineries.

Each carrier would furnish the commission a blue print or other chart showing wells from which it takes oil, thus making the matter of determining per well production a matter of arithmetic. Commission employes, by checking meters weekly, would be able to obtain a daily average, and determine whether any wells on any gathering system are producing more oil than their neighbors.

"Those operators who are fair to their royalty owners and their offset neighbors will be glad to see the meters installed, Upchurch said. "Their chief purpose would be to make certain that every one in the field is treated alike in the Railroad Commission's orders, and that no man has an advantage."

In addition to furnishing this check, Upchurch pointed out, statistics thus obtained could be checked by the Comptroller's Department in determining gross production tax, thus preventing any tax evasion.

Another advantage, Upchurch said, would be that it would eliminate the bypass, since the meter would show the amount of oil entering the trunk line regardless of whether that oil flowed from the tanks or by a hidden passage. It would aid, he said, in checking up on gasoline tax evasions now under investigation by the comptroller and attorney general. It was explained that the favorite method of selling gasoline from the refinery to the tank wagon to evade the tax is to list the sale as half gasoline and half kerosene, there being no tax on the latter. By knowing how much crude goes into a refinery, a fairly accurate idea could be obtained of the amount of gasoline which should come out of the refinery, Upchurch said.

OPEN PUBLIC DOMAIN UNDER UNIT PLAN

(Continued from Page 24)

in the event of a discovery of oil or gas he will promptly apply for leases on the entire permit area.

The applicant also will have to agree that no oil or gas in commercial quantities shall be produced except pursuant to a plan of unit operation or other cooperative plan approved by the secretary before a permit or lease is issued.

The order stipulates that any applicant agrees to conform to regulations which may be incorporated in any cooperative or unit plan of development or operation approved as to location and spacing of wells, time and method of drilling, well casing and production programs as may in the opinion of the secretary be necessary to secure the conservation or increased ultimate recovery of oil and gas.

An agreement also must be entered into by the applicant that he will comply with all state and federal laws, regulations and orders and to conform to any allowance of production fixed for the field, pool or area by the state in which the permit land is situated and to proration of market outlets equitably among all producers of said field, pool or area.

The applicant also must agree to protect the United States currently against loss of royalty through drainage from the permit area except such loss as may be occasioned by operations under a unit plan regularly adopted and approved. The amount of such drainage and loss of royalty resulting therefrom must be fixed monthly by the supervisor of oil and gas operations subject to the right of appeal to the secretary.

The applicant must agree to make no assignment or other disposal of entry, whether royalty, working or otherwise, except with the approval of the secretary of the interior.

ADVANCE IN REFINERY MARKET CONTINUES

(Continued from Page 12)

buying for outside movement, had not met the 15-cent advance which was made effective on April 1 by several other refining companies. Most of the refiners apparently felt that the higher crude schedules would be made generally effective the first of the month and the latter part of last week, the low octane grade of U. S. Motor advanced to a low of 4¼ cents with a high of 4¼ cents. A few of the larger refiners advanced to a low of 4½ cents for the low octane on Monday and Tuesday with a 5-cent quotation for the 57-65 octane and 5¼ cents for the grade above 65 octane.

Trading was light at the higher quotations. Some resale material bought in March for delivery over the first half of April was available at 4 cents for the low octane U. S. Motor but the quantity was not large and refiners were a unit in seeking higher prices for any new business.

Those in daily touch with the market were in agreement that spot gasoline prices have gone as high as they can until there are additional developments in the crude market. A majority feel that the higher schedules will be made effective by all crude buyers before April 15 and this increase will be accompanied with at least a 1-cent advance in gasoline tank wagon and service station prices throughout the Middle West.

Contract Purchases

So far as the tank wagon and service station prices are concerned the spot market has advanced to the point where many jobbers are buying from refiners on a basis of their minimum guarantee as provided in their contracts. These contracts guarantee the jobbers minimum margins between the delivered tank car price and the service station price varying from 4½ to 6 cents per gallon. When the spot price in Oklahoma passed 4 cents the minimum feature of the contracts became effective in many cases. There are a few of the 6-cent guarantees which are netting the refiners around 3 cents a gallon at this time. It is due to this situation that refiners generally are anxious for at least a 1-cent increase in the gasoline tank wagon and service station schedules. Such an increase has been made effective in several southwestern states.

Another stop in the gasoline tank car advance is the attitude of sellers in competitive refining areas. There are already some indications that inland Pennsylvania and Ohio refineries are taking advantage of the Mid-Continent advance to dispose of greater quantities of their gasoline. Last fall when Mid-Continent refiners advanced their gasoline quotations, these refiners and other competitive groups widened their marketing territory and were held partially responsible for the fact that the Mid-Continent advance was not maintained. This situation also applies to the Gulf Coast refiners. Normally, the South Texas refiners do not attempt to compete with the Mid-Continent in northern markets but with prices in the two areas now on a parity, the coastal refiners may offer gasoline to jobbers of the Middle West. The slow export and coastwise market on gasoline is also a factor. These prices are now practically the same as those prevailing in Group 3. With a healthy market situation the Gulf Coast price should be 2 cents a gallon higher than Group 3.

In brief, the present Mid-Continent gasoline market must be supported by similar price increases in other areas before additional advances are justified. The competition between refining areas in the United States including California shipments to the East Coast was never more intense than it is at this time and refiners generally realize the futility of endeavoring to maintain tank car prices in any section which are out of line with those in other groups, taking into consideration the differences in freight rates between refineries and consuming points.

Gasoline and Naphtha

Several refiners reported sales of low octane U. S. Motor gasoline on Monday and Tuesday at 4⅛ and 4¼ cents. Fewer sales were reported at the higher levels of 4⅜ and 4½ cents. The low on resale material appeared to be 4 cents on Tuesday and this was not coming directly from Oklahoma refiners. Most sellers are asking one-half cent above their low octane U. S. Motor for the 57-65 grade and three-fourths cent for above 65 octane. Trading in the U. S. Motor grades on the spot market is slow. The contract movement has improved and most refiners are shipping their output currently.

Buyers of 400 endpoint gasoline found the market firm with quotations one-eighth cent above the U. S. Motor grades. The prices on the 390, 375 and 350 grades carried in this issue are largely nominal. Not more than a half dozen refiners in Oklahoma are offering one or more of these grades and the movement over the past week was confined to regular jobber customers.

Natural Gasoline

Trading in the regular grades of natural gasoline was fair the first of the week. The demand is not heavy enough to support a substantial advance in prices although many of the manufacturers feel that buying will improve before the fifteenth of the month. The 26-70 grade was quoted at 2⅛ and 2¼ cents. The 30-70 grade was one-eighth cent lower. The 18-55 grade was unchanged from last week at a low of 2½ cents. The stabilized grades under 12 pounds vapor pressure are being sold direct as motor fuels. These grades which sell from 3½ cents up are competing more and more with all grades of refinery gasoline in sales to jobbers.

Fuels and Gas Oils

Low gravity industrial fuels coming from the reducing and cracking stills of Oklahoma refiners advanced 2½ cents per barrel over the week.

The low on a commercial grade was 25 cents the first of the week and intrastate sales were being made as high as 35 cents. A few refiners have reduced their crude runs and are expanding their cracking to the point where they do not have sufficient fuel to take care of their railroad contracts and regular buyers. The higher gravity fuels are firm and the high cold test material from the skimming plants of Oklahoma City is being absorbed by local buyers and refiners who use the topped crude as cracking stock. The topped crude, which usually has a gravity between 24 and 28, is bringing as high as 37½ cents per barrel. The cold test is above 60. Oklahoma gas oils have advanced to a low of 1¼ cents with sales as high as 1½ cents reported.

Lubricants

The price advances in bright stocks of last week are being maintained. A better demand for cylinder stocks, natural oils and finished motor oils was reported by several manufacturers. The demand for wax is sufficient to maintain the price of 1¾ cents per pound for the 124-126 grade.

EBEN M. BYERS DIES AFTER LONG ILLNESS

NEW YORK, Apr. 4.—Eben MacBurney Byers, wealthy iron manufacturer of Pittsburgh and New York and internationally known sportsman, after a long illness died of radium poisoning at the Doctors' Hospital Thursday at the age of 51.

Mr. Byers, who was chairman of the board of the A. M. Byers Co., New York and Pittsburgh, manufacturers of wrought iron pipe, won the national amateur golf championship at the Englewood, N. J., Golf Club in 1906. He also was prominent in horse racing, trapshooting and other sports. He long maintained racing stables here and in England and his entries were seen in many important races. He followed baseball with enthusiasm and had the same box at Forbes Field, in Pittsburgh, for many years. Mr. Byers had won numerous trophies for trapshooting, a sport which first engaged his interest in 1916.

Late Fields

(Continued from Page 24)

Misener sand at 3,235-44 feet, where the well pumped 600 bbls. of oil the first 24 hours.

Skelton Oil Co.'s No. 1 Ott, C SE SE Section 16-19-14w, Barton County wildcat, found 2,000,000 feet of gas at 3,485 feet and was preparing to drill deeper.

In Stafford County, Midwest Refining Co.'s No. 29 Allen, C SW SW Section 31-22-11w, swabbed 1,036 bbls. of oil in 24 hours from the Siliceous lime at 3,535-60 feet.

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AZNEFT IS DEVELOPING DEEP PRODUCING SAND

(Continued from Page 14)

surmise that the area saturated with oil will shrink with increasing depth. It is likely that this deposit is analogous to the Lenin Field, where the lower levels of the Kirmak strata reach out much farther than the higher strata. And there is good reason for asserting that the lower strata will be just as much saturated with oil as the higher. Analysis of the oil obtained from well No. 132 (lower part) shows a greater content of benzine than crude previously obtained from the lower formations.

The Bay

The favorable results obtained from well No. 204 in the southern extremity of the bay (production about 1,500 tons a day from a depth of 679 meters in the seventh horizon) have led to the investigation of the horizons of the upper formations being carried farther out to sea on the boundary of the old reclaimed part. The discovery of new horizons is also essential if production is to develop uninterruptedly; small islets have been built in the sea for exploratory drilling, and the electrical prospecting methods have furnished valuable data regarding the structure of the submerged strata. In particular, the outputs from the deep twelfth horizon are sufficiently high with 450 to 500 tons a day.

Poota

This is the Azneft's youngest oil field. Exploratory drilling during the year confirmed that the middle formations are highly saturated with oil (300 to 400 tons a day) and supplied valuable data relative to the lower formations. As was to be expected, the lower levels proved to be even more prolific than the upper strata; well No. 47 had a gushing production of 1,500 tons a day from a depth of 720 meters.

CANADIAN FIELDS

(Continued from Page 43)

structure, which covers a considerable area, failed to encounter commercial oil or gas production. While this well may or may not constitute a conclusive test of the entire structure, this company does not feel that the possibilities evidenced by the showings encountered warrant us in making the expenditure of money necessary to drill a second test at this time."

Turner Valley Conservation

Pending a formal report to J. E. Brownlee, head of the Alberta provisional government, no details have been officially made public as to the terms of the agreement reached last week by the various interested parties in connection with Turner Valley conservation.

Following an extended hearing before the agricultural committee of the Alberta legislature, the entire conservation question was referred to a conference, headed by Dr. R. C. Wallace, president of the University of Alberta. The conference included Judge A. A. Carpenter, chairman of the Alberta Public Utilities Commission; J. J. Frawley, of the attorney-general's department, and Frank P. Fisher, technical advisor, representing the Alberta government; Dr. O. B. Hopkins, of Imperial Oil, Ltd.; P. D. Mellon, H. R. Milner and Stanley J. Davies, of the Canadian Western Natural Gas Co.; Mayor Andy Davison, L. W. Brockington and L. H. Fenerty, for the city of Calgary; Col. L. D. M. Baxter, for the Calgary & Edmonton Corp.; Herbert E. Greenfield, B. F. Hake and J. McKinley Cameron, representing a group of independent operators; Fred Schultz, of Wellington Oil & Gas Co.; W. E. McLeod, Sioux City Oils; W. S. Herron, Okalta Oils; A. H. Mayland, Mercury Oils; Harvey S. Price, East Crest Oil Co., and A. J. McWilliams, Freehold Oil Corp.

The only statement made by Chairman Wallace was that a basis of agreement had been reached with regard to the policy to be followed in the conservation of gas, procedure in dealing with the management of the field, and the matter of compensation to operators for decreased naphtha sales. Minor issues had also been settled. The ultimate agreement is understood to involve a modification of the original proposals presented by Frank P. Fisher and the Calgary & Edmonton Corp.

TANK WAGON CHANGES

(Continued from Page 70)

McCook	17.0	17.0	4.0	7.5
Norfolk	16.75	17.75	4.0	9.75
N. Platte	17.75	18.75	4.0	10.50
Scottsbluff	17.0	17.0	4.0	9.0

Note—Dealers' discount allowed as follows: Red Crown Ethyl, 3 cents off station price; Red Crown, 2½ cents off normal service station price; Nebraska Blue (third grade), 1 cent off normal service station price.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	10.7	6.23
V.M.P. naphtha	12.7	7.73
Cleaners' naphtha	15.2	9.23
Stanisol	15.2	9.23

Tank wagon prices f.o.b. Chicago January 6, 1932. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

STANOLIND FURNACE OIL IN CHICAGO

Effective July 1, prices f.ob. Chicago, tank wagon prices: 1 to 99 gallons, 8 cents; 100 gallons or more, 6 cents.

Stanolex Fuel

Effective May 9, f.o.b. Chicago, tank wagon prices: 1 to 199 gallons, 7 cents; 200 gallons or more, 5 cents. Sinclair met this by bringing down the price of its No. 1.

Fuel Oils

Chicago tank wagon prices (in lots of 400 gallons and over): 38-40 straw distillate, 6 cents; 32-36 gas oil (light zero), 5.5 cents; 32-36 gas oil (industrial), 5.25 cents; 28-30 zero fuel oil, 5 cents; 24-26 fuel oil, 4.25 cents; 18-22 fuel oil, 3.75 cents.

KANSAS FIELDS

(Continued from Page 38)

31-6, is spudding. Roth & Faurot made location for No. 3 College, SW cor. NW SE Section 22-32-4. Roth & Faurot's No. 1 Schul, Lot 4, Block 28, Reynolds College View addition to the city of Winfield, SW cor. NE Section 22-32-4, has been completed for 300 bbls. in Siliceous lime at 3,256-71 feet after being deepened from 2,359 feet. No. 1 College, NW cor. SE Section 22-32-4, has been completed for 300 bbls. in Siliceous lime at 3,296-3,302 feet.

Ellsworth County

Aylward and others' No. 2 Stratman, NE cor. NW SE Section 1-17-10w, has been completed for 1,918 bbls. in Siliceous lime at 3,268-87 feet. Derby Oil Co.'s No. 1 Stratman, NE cor. NW NE Section 12-17-10w, topped Siliceous lime at 3,253 feet, drilled to 3,283½ feet and was completed for 974 bbls.

Greenwood County

McPherson Oil & Gas Co.'s No. 1 Nixon, NE cor. NW NW Section 36-24-9, is dry and abandoned at 2,315 feet. Wilson and others' No. 1 Alspaugh, C SW NW Section 16-28-12, has been abandoned at 1,025 feet.

Kingman County

Skelly Oil Co. made location for No. 1 Miles, SE cor. Section 19-27-10w.

McPherson County

Mid-Kansas Oil & Gas Co. made location for No. 1 Helstrom, NW cor. SE Section 35-19-3w. Helmerick, Payne and Shell Petroleum Corp.'s No. 1 Russell, NE cor. SW SE Section 12-19-2w, Ritz-Garrett-Decker Field, is dry and abandoned at 3,443 feet. Derby Oil Co. and The Texas Company's No. 2 Unruh, SW cor. SE Section 26-19-2w, has been completed for 535 bbls. in 2,915-66 feet.

Reno County

Martin and others made location for No. 1 Yoder, C NW NW Section 15-24-5w.

Rice County

Empire Oil & Refining Co. staked location for No. 1 Heckel, NW cor. SW Section 18-20-9w. Material is being moved in for No. 1 Masemore, SW cor. NW Section 18-20-9w. Magnolia Petroleum Co.'s No. 1 Bayer, SW cor. NW Section 7-20-10w, is dry and abandoned at 3,432 feet.

Sedgwick County

Shell Petroleum Corp.'s No. 4 Lygrisse "A", NW cor. SE NE Section 15-26-2, is moving in. Graham Brothers' No. 1 Rapp, NE cor. Section 21-26-2, is a rig on the ground. Continental Oil Co. and Gypsy Oil Co.'s No. 1 Lamb, SE cor. NE Section 12-26-1w, topped Viola lime at 3,335 feet, drilled to 3,339 feet then plugged back to 3,337½ feet and was completed for 126 bbls.

Sumner County

Gypsy Oil Co.'s No. 1 Williams, SE cor. SW NE SW Section 16-35-3w, is dry and abandoned at 5,076 feet, after being deepened from 4,782 feet.

M. F. FREY DIES

NEW YORK, Apr. 4.—Morris F. Frey, assistant treasurer of the Standard Oil Co. (New Jersey), died at his home at Morristown, N. J., on March 31, at the age of 49. Mr. Frey joined the Standard Oil Co. (New Jersey) in 1924 in charge of the company's newly formed tax department.

OKLAHOMA FIELDS

(Continued from Page 37)

age which was estimated the commission would be able to strike off:

Company and well—	Amt.
Anderson-Prichard's No. 1 Graham*	20,087
Argood's No. 1 Catalina*	10,599
Coline's No. 8 Clauer*	3,171
Franklin's No. 7 Theimer*	2,945
I. T. I. O.'s No. 1 Banta	18,551
I. T. I. O.'s No. 1 Foster	2,529
I. T. I. O.'s No. 1 Holmes-Gray*	6,417
I. T. I. O.'s No. 2 Ivanhoe	4,361
I. T. I. O.'s No. 1 Magnolia*	3,973
I. T. I. O.'s No. 1 Mount Vernon*	5,355
I. T. I. O.'s No. 4 Spillman*	24,282
Shell's No. 2 Petty	2,367
Shell's No. 5 Petty	2,470
Sinclair's No. 4 Kinter	2,478
Sinclair's No. 7 Kinter	2,735
Slick's No. 1 Hoopes*	27,301
Slick's No. 5 Hoopes*	23,213
Total	163,104

*Denotes wells making water.

Reclassified Allowables

An increase in the state's allowable of approximately 25,000 bbls. a day was announced. The allowable as estimated at the statewide proration hearing would give Oklahoma City 115,000 bbls., class "B" areas 137,107 bbls., class "C" wells 20,875 bbls. and the stripper and class "A" areas 181,181 bbls. daily.

Nominations made by purchasers in the Oklahoma City Field were increased to 107,680 bbls. during the week when the Indian Territory Illuminating Oil Co. asked for 5,000 bbls. daily. Up to the time this was written the Sinclair-Texas Pipe Line Co. had not made any nomination, but it is believed the company was waiting until the merger of the Sinclair, Prairie and Prairie Pipe Line companies is completed before making its April nominations. The Sinclair-Texas Pipe Line Co. has been handling around 11,000 bbls. daily during the month of March.

Ray M. Collins, state umpire, filed with the Corporation Commission the pipe line shipments and the potentials of the class "A" wells and the estimates for the next three months:

Month—	Potential	Pipe line shipments
January	198,738	174,884
February	196,751	175,000
March	194,783	*175,000
April	192,835	*182,870
May	190,907	*182,870
June	188,998	*182,870

*Denotes estimates.

The potentials and the pipe line shipments for wells in class "B" areas were given by months as follows:

Month—	Potential	Pipe line shipments
January	297,012	124,761
February	300,336	137,384
March	302,073	*135,000
April	302,073	*137,107

*Denotes estimates.

Mr. Collins estimated that the class "B" wells should be allowed 135,000 bbls. of oil daily and that this figure would be 44 per cent of the last gauged potential, less 2 per cent decline.

The class "C" areas were estimated to have a potential of 136,972 bbls., and production would be 20,875 bbls. during the month of April. The total for the last three months and the estimated potential and pipe line shipments for April were as follows:

Month—	Potential	Pipe line shipments
January	127,144	16,261
February	128,072	16,504
March	128,059	*16,504
April	136,972	*20,875

*Denotes estimates.

Other classifications in the State include Class A wells with a 20-bbl. exemption, and miscellaneous areas. Figures on those fields were as follows:

CLASS A (20-BBL. EXEMPTIONS)

Month—	Potential	Pipe line shipments
January	39,596	23,160
February	33,558	22,985
March	32,424	*21,435
April	31,145	*19,491

*Denotes estimates.

MISCELLANEOUS AREAS

January	159,142	151,724
February	163,193	152,015
March	162,359	*152,015
April	161,690	*161,690

*Denotes estimates.

Oil operators with production in the West Seminole Pool, requested the Corporation Commission to change the classification of the wells in the area from Class C to Class B in order to receive the full benefits to that class under the order of the commission.

Drilling Regulations

In the order issued by the commission operators in the Oklahoma City Field will be permitted to erect a derrick, then shut down for 58 days before rigging up and starting drilling operations, under a journal entry of the Oklahoma Corporation Commission, made during the week.

The change was recommended by the committee of five selected by State Umpire Collins. Drilling tests are allowed seven days for cement to set in last string of casing, and this with the 58 days shut down makes a total of 65 days shut down time on each well. After the completion of the 65-day shut down time a well may go on production and take potential gauges immediately upon completion. Operators electing to shut down before completion must get a permit from the umpire, who will check the time on commencement of work.

New potentials on eight wells in the Oklahoma City Field were announced from the umpire's office during the week. Four of these wells were old producers. The wells are: Phillips Petroleum Co.'s No. 1 Traders Compress, 925 bbls.; No. 1 Everest, 8,782 bbls.; No. 1 Classen, 7,600 bbls.; Tom Slick Oil Co.'s No. 4 Terminal, 9,324 bbls.; Ocate Oil Co.'s No. 2 Smith, 9,102 bbls.; Indian Territory Illuminating Oil Co.'s No. 1 Nettie Emerson, 11 bbls.; No. 4 Spillman, 62 bbls, and No. 5 Trosper, 162 bbls.

27,000,000-Foot Gasser

Atlantic Oil Producing Co.'s No. 1 Bebee, NE cor. SW SW, Section 8-13-6, Lincoln County wildcat, was completed for 27,000,000 feet of gas a day with a rock pressure of 1,600 pounds. The hole was plugged back from a total depth of 4,451 feet to 4,236-40 feet where the casing was ripped. The Wilcox sand was 4,445-51 feet, where a hole full of water was found.

J. H. Rebold Oil Co.'s No. 1 Rossiter, NE cor. SE NW NE, Section 1-12-13, Okmulgee County, topped the Viola lime at 2,662 feet. The test is located diagonally across 10 acres from the W. B. Pine's No. 1 Bradford, which was completed for 135 bbls. a day from the Wilcox sand. The Rebold test is reported to be running favorably on structure compared to the Pine well. A new location was announced, Jake Rutz Oil Co.'s No. 1 Davis, NE cor. SE NW, Section 1-12-13, located in the same area.

Carter County

Frank Lundy and others' No. 1 Spragins, NE cor. cor. NW SW Section 8-1s-2w, is drilling at 2,550 feet.

Creek County

Barnsdall Oil Co.'s No. 1 N. Davis, SW cor. SE NW Section 21-19-9, is a machine rigging up. Westfall and E. L. Robinson moved a machine in for No. 1 Wright, SE cor. NE NW Section 1-18-8. F. R. Billingslea's No. 17 W. Lee, CNL S half S half SE Section 12-18-11, is a machine rigging up. Atlantic Oil Producing Co. and others' No. 1 Harjo "D", SE cor. NE Section 27-14-10, is rigging

up. A. A. Bailey Oil & Gas Co.'s No. 2 Weaver "C", SW cor. NW SW Section 18-19-9, has been completed for 30 bbls. in Skinner sand at 2,234-85 feet. Sand Springs Home Oil Co.'s No. 13 Atkins, NE cor. SW NW Section 4-18-7, drilled to 3,811 feet, plugged back to 2,575 feet and is being used as a repressuring hole. O. M. Irelan's No. 1 J. Tate, SE cor. SW Section 34-18-10, is dry and abandoned at 1,091 feet.

Hughes County

Eason Oil Co.'s No. 1 Huggins, C NW SE Section 1-7-8, is a rig under construction. Head and others' No. 1 Breeding, SE cor. NE NE Section 12-7-8, is a location.

Lincoln County

Atlantic Oil Producing Co. and others' No. 1 Beebe, NE cor. SW SW, Section 8-13-6, has been shut in for 27,000,000 feet of gas in Hunton lime after plugging back from Wilcox sand at 4,445-51 feet.

Muskogee County

R. B. Hash and others' No. 1 M. Richards, NE cor. NW NW SW Section 34-16-15, is dry and abandoned at 1,193 feet. H. L. Jolly's No. 1 E. Spaulding, NW cor. NE Section 9-15-18, is dry and abandoned at 1,018 feet. M. S. Mussellem's No. 1-A Lewis, SW cor. SE NE Section 17-14-17, has been completed for 20 bbls. in sand at 1,290-1,335 feet, total depth 1,345 feet.

Okfuskee County

Keaton & Gold Oil & Gas Co. has the rig up for No. 2 Delfield, NW cor. NE NW Section 18-12-11. Wells and others moved a machine in for No. 3 Stilwell, CSL NE NE Section 14-10-11. H. Stekoll and others' No. 25 N. Holmes, NE cor. SW SE Section 16-11-11, has been completed for 90 bbls. in sand at 2,648-90 feet.

Oklahoma County

Hall & Briscoe's No. 1 Payne, Block 11, Lot 15, Central addition to Oklahoma City, SW cor. NE SE Section 3-11-3w, is a cellar. Shaffer, Heenan and Coe made location for No. 1 McKee, SE cor. NW NE NW Section 3-11-3w. T. B. Slick Estate and Frisco Railway Co.'s No. 5 Frisco, NE cor. NW SE Section 3-11-3w is a cellar. Phillips Petroleum Co. and others made location for No. 3 Hyland, Block 20, Lot 17, Patterson addition, CNL SE SW NE Section 10-11-3w. No. 4 Hyland is a location, Block 29, Lot 20, Patterson addition, CNL SW SW NE Section 10-11-3w. T. B. Slick Estate and Buck's No. 5 Long is a cellar in the CWL SE SW SE Section 15-11-3w. Anderson & Prichard and Anderson & Kerr made location for No. 1 Bailey, Block 3, Lots 11 and 12, Hills Subdivision of Fletcher Heights addition, NW cor. NE NW SE Section 22-11-3w. Harrell-Davis and others' No. 3 Fish, CWL NE SE SE Section 22-11-3w, is rigging up rotary. Ocate Oil Co.'s No. 2 Smith, CSL SE NE NW Section 15-11-3w, topped the Wilcox sand at 6,400 feet, drilled to 6,517 feet and has been completed for 5,054 bbls. in four hours on a 4½-inch choke.

Okmulgee County

A. E. Bassinger has the rig up and tools in for No. 1 Harris, SW cor. NW NW Section 32-14-12. Iron Mountain Oil Co.'s No. 3 J. King, SE cor. NW NW SW Section 18-13-15, has been completed for 5 bbls. in sand at 1,296-1,310 feet.

Seminole County

Ute Oil Co.'s No. 1 Combs, SW cor. NW SE Section 18-10-7, is a cellar. Sunbeam Oil Co.'s No. 1-A Campbell, NW cor. SE Section 20-9-6, is a cellar. Amerada Petroleum Corp. and Stanolind Oil & Gas Co.'s No. 2 Chase, SE cor. NE SW Section 29-9-6, is a rig on the ground. Anderson & Kerr made location for No. 1-A Davis, SE cor. NW Section 29-8-7. J. L. McKeown and others' No. 3 Micco, SW cor. Section 32-8-7, is a location. Mid-Kansas Oil & Gas Co. made location for No. 6 Davis, NE cor. NW Section 30-8-8, Wewoka Pool. Tulsa Oil Co.'s No. 1 Samele, NE cor. SW NE Section 30-7-8, has been completed for 1,835 bbls. in sand at 3,048-52 feet.

Stephens County

J. C. Chambers has the rig up and tools in for No. 3 Dare, NE cor. NW SE Section 2-2s-8w. Pace & Texhoma Oil Co.'s No. 8 Houston, SE cor. NE SW Section 2-2s-8w, is a rig. Pace and others' No. 2 Green, SE cor. SW NE Section 2-2s-8w, has been completed for 60 bbls. in sand at 1,417-27 feet.

Tulsa County

Bowder & George's No. 1-A Chisholm, NW cor. NE Section 5-17-14, has been completed for 15 bbls. in sand at 1,490-1,541 feet.

Wagoner County

C. A. Mechlin and others' No. 1-A Drew, SE cor. SW SW NW Section 30-18-15, made a 5-bbl. well in sand at 1,250-89 feet.

COMPLETIONS

Osage County

Oklahoma Power & Water Co. is moving a machine in for No. 134, NE cor. NW SE, Section 29-20-10. Galt Brown Oil Co. has the machine and tools in for No. 6, SE cor. SW NE, Section 15-24-8. Lindy Oil Co.'s No. 3, NE cor. NW SW, Section 29-20-12, has been completed for 25 bbls. in Bartlesville sand 1,408-22 feet.

Pawnee County

Roy Bean and others' No. 1 Payne, SW cor. NW, Section 21-20-10, is dry and abandoned at 2,191 feet.

JO CAPPEAU'S FIRST OIL JOB WAS RISKY

(Continued from Page 17)

at a certain hour previously. Jo appeared at the appointed time and place, but Si was detained by some circumstance and the former concluded to do the hazardous job alone. Watching his chance, Jo crept up to the tankhouse in the darkness, unseen by a guard who paced back and forth carrying a shotgun. To reach the hole in the wall he was obliged to crawl through several inches of slush from the well. It always was characteristic of Jo Cappeau to keep himself well groomed, but when he rose to his feet from the black ooze he looked like something that might have been fished out of the sand pumpings. However, the slime that coated him served as a lubricant and helped him to work his way through the hole in the wall. Jo gauged the tank and regained safety undetected by the guard. Si Hughes appeared at this juncture and Jo gave to him the information sought. The two wired their chiefs that there was likelihood of the 646 mystery being a big producer. Jo was getting $75 a month at this time. He informed Mr. Young about the ruined suit of clothes. The latter bought Jo a new suit and raised his salary.

The employers of both scouts, on the strength of the information acquired concerning the well's production, began leasing property in the neighborhood of the 646. Other producers did likewise. By the first of May there were 13 wells in various stages of drilling. The drill was started in 646 again and its production in the first 24 hours was more than 1,000 bbls. Further drilling increased the output to 2,500 bbls. By December 8 of the same year the production of the famous well had dwindled to five-eighths of a barrel daily and other wells in the short-lived field were declining at the same rate.

Expected Shannon to Be a Big One

The Shannon well, which opened the "Cooper tract," 10 miles southeast of Sheffield, Warren County, was the center of high interest in the spring of 1882. The Shannon, carefully guarded as a mystery, was expected to be a gusher, and the market, already weakened by the train of big producers in the Cherry Grove district, was demoralized further by predictions concerning the Shannon. Notwithstanding the precautions of the owners to keep work on the well secret, Jo and the other scouts assigned to it kept their employers informed almost as accurately as the owners themselves were.

Expecting a 2,000-bbl. producer, the owners formed a syndicate with Bradford speculators and sold about 1,000,000 bbls. of oil short, most of it at prices lower than 60 cents a barrel. Then they drilled in the well, redoubling their vigilance to prevent information from leaking out. The scouts, however, had become expert at estimating a well's production and they convinced themselves that the Shannon, instead of being a gusher, was good for not more than 175 bbls. a day, and they reported this as their estimate. With the probable productivity of the Shannon thus known by oil exchange traders, there was no possibility of the men in the syndicate buying back the million or so barrels of oil they had sold short. The market, instead of going below 60 cents, advanced to 75 cents on the afternoon of the day when the scouts wired their reports, and the next day the boggled "shorts" were obliged to cover their sales, pocketing heavy losses.

An incident recalled in connection with the Shannon concerns Edward Bowen, an Irish driller. Eddie, who soon was to become an excellent scout, had his first scouting experience on the Shannon, having been engaged hurriedly by a well-known speculator the day the well was to be drilled in. He was a good horseman, had a fleet mount and outdistanced the rest of the scouts in the 10-mile ride from the well to the Sheffield telegraph office. When the others drew up and slid from their saddles they observed Eddie walking about nervously and deeply troubled about something.

No Wonder He Was Worried

"What's the matter, Eddie?" asked one of the scouts after filing his report.

The worried man was reticent, but after a while he exploded, "Damn it all, I've forgot the name of the man that hired me!"

Several of the scouts knew who had engaged Eddie and when all the rest of the reports had been filed with the telegraph operator they removed a weight from his mind by telling him.

In an exchange of shots with a guard at the Shannon well a bullet pierced Si Hughes' trousers at the knee. Another scout was behind a tree when a guard's bullet penetrated the other side of the trunk.

On August 4, 1882, Jo ascertained that the Mehoopany No. 3, a mystery well in the Cherry Grove development, was to be drilled in the next day. He passed this information on to James C. Tennent and J. C. McMullen, fellow scouts. The next morning the three, equipped with field glasses, hid in bushes on a hillside overlooking the well. The drillers, unsuspicious, worked openly. Stopping when they reached the top of the oil sand, they pulled out the tools and bailed the hole clean. Then they started in again and after drilling for 20 minutes pulled the tools. This time oil showed on the cable above the rope socket, evidence of a good well.

Apparently satisfied with this showing, Phil Roth, one of the owners, who was directing operations, brought two wooden plugs, each about 6 feet long, from the engine house. The plugs were slightly smaller than the hole down to a point near the oil sand, where the drillers had decreased the hole's size. Mr. Roth dropped one of the plugs into the hole. The tools were sent down after it and it was driven tightly into the restricted part of the hole at the bottom. Pulling

CALIFORNIA CRUDE OIL PRICES

(Continued from Page 69)

Wheeler Ridge—55 cents per barrel for all grades (14° to 25.9°).
Coalinga—55 cents for all grades from 14° to 24-24.9°; 57 cents for 25 gravity.
Newhall, McKittrick and Kern River—55 cents for all grades (14° to 19.9°).
Montebello—65 cents for all grades (14° to 25.9°).
Whittier and LaHabra—65 cents for all grades (14° to 22.9°).
Elwood Terrace, f.o.b. ship—33° to 33.9°, 79 cents; 34° to 34.9°, 81 cents; 35° to 35.9°, 84 cents; 36° and above, 87 cents.
Playa Del Rey—Prices subject to field gathering charge of 5 cents per barrel—19° to 19.9°, 65 cents; 20° to 20.9°, 65 cents; 21° to 21.9°, 66 cents; 22° to 22.9°, 67 cents; 23° to 23.9°, 68 cents; 24° to 24.9°, 67 cents; 25° and above, 68 cents.

ASSOCIATED OIL CO. PRICES

Associated Oil Co. prices effective June 20 are as follows:
Ventura Avenue, 22 gravity, 58 cents, with 2 cents added for each degree upward to and including 30 gravity, which is 74 cents.
Kettleman Hills—The Associated Oil Co., effective at 7 a.m. February 5, 1932, withdrew and canceled any and all prices heretofore published and in effect for Kettleman Hills oil.
Potrero, 24 gravity, 69 cents, with 2 cents added for each degree upward to 34 gravity which is 69 cents.
General Petroleum Co. in Kettleman Hills, effective January 1, 1932: 33-33.9 degrees, 66 cents; 34-34.9 degrees, 68 cents; 35-35.9 degrees, 70 cents; 36-36.9 degrees, 72 cents; 37-37.9 degrees, 74 cents; 38-38.9 degrees, 76 cents; 39-39.9 degrees, 78 cents.

UNION OIL CO. OF CALIFORNIA

Crude Oil Prices for Its Purchases at the Well for Crude Produced in Strict Accordance With the Production Allocations Made by the California Statewide Curtailment Committee Effective 7 a.m., June 20, 1931
(All gravities above those quoted take highest price for that field)

Gravity °A.P.I.	Signal Hill	Alamitos Heights Seal Beach	Huntington Beach Athens, Rosecrans, Domingues	Torrance	Santa Fe Springs	Playa Del Rey* E. Coyote	Richfield	Montebello	Santa Paula	Orcutt	Coalinga	Lost Hills	McKittrick, Kern River Sunset-Midway, Elk Hills, Buena Vista Hills	Gravity °A.P.I.
11-13.9	....	....	....	....	....	....	....	....	....	....	....	....	$.50	11-13.9
14-14.9	$.65	$.65	$.65	....	$.65	....	$.65	$.65	$.65	$.55	$.55	$.55	.55	14-14.9
15-15.9	.65	.65	.65	....	.65	....	.65	.65	.65	.55	.55	.55	.55	15-15.9
16-16.9	.65	.65	.65	....	.65	....	.65	.65	.65	.55	.55	.55	.55	16-16.9
17-17.9	.65	.65	.65	....	.65	....	.65	.65	.65	.55	.55	.55	.55	17-17.9
18-18.9	.65	.65	.65	....	.65	....	.65	.65	.65	.55	.55	.55	.55	18-18.9
19-19.9	.65	.65	.65	....	.65	....	$.65	.65	.65	.55	.55	.55	.55	19-19.9
20-20.9	.65	.65	.65	....	.65	....	.65	.65	.65	.55	.56	.55	.55	20-20.9
21-21.9	.65	.65	.65	....	.65	....	.66	.66	.65	.55	.57	.55	.57	21-21.9
22-22.9	.65	.65	.65	....	.66	....	.67	.67	.65	.55	.59	.55	.59	22-22.9
23-23.9	.67	.67	.67	....	.67	....	.68	.68	.65	.55	.61	.55	.60	23-23.9
24-24.9	.69	.69	.69	$.69	.68	$.65	.69	.69	.65	.56	.63	.56	.62	.61 24-24.9
25-25.9	.71	.71	.71	.71	.70	.65	.70	.70	.65	.58	.65	.57	.64	.64 25-25.9
26-26.9	.73	.73	.73	.73	....	.65	....	.72	....	.70	.67	....	.66	.66 26-26.9
27-27.9	.75	.75	.75	.75	....	.68	....	.74	....	.72	....	....	.67	.68 27-27.9
28-28.9	.77	....	....	.77	....	.71	....	....	....	.74	....	....	.69	.71 28-28.9
29-29.9	.79	....	....	.79	....	.73	....	....	....	.76	....	....	.71	.74 29-29.9
30-30.9	.81	....	....	.81	....	.75	....	....	....	.78	....	....	.72	.76 30-30.9
31-31.9	....	....	....	.83	....	.78	....	....	....	....	....	....	....	.... 31-31.9
32-32.9	....	....	....	.85	....	.80	....	....	....	....	....	....	....	.... 32-32.9
33-33.9	....	....	....	.87	....	.83	....	....	....	....	....	....	....	.... 33-33.9
34-34.9	....	....	....	.89	....	.85	....	....	....	....	....	....	....	.... 34-34.9

*Subject to a gathering charge of 5 cents per barrel.

out the tools, the workmen shoveled in some sand pumpings. Then they dropped the second plug in, forcing it in tightly as they had the first one. The plugs, being made of extremely dry pine, swelled as moisture of the well reached them.

Mr. Roth then started for the little village of Garfield, a short distance away. The three scouts hurried to a point in the road ahead of Mr. Roth and walked toward the well, soon meeting him.

"Hello, boys," he greeted them. "What's the matter?"

The scouts told him they understood the Mehoopany was to be drilled in.

Too Bad, Too Bad!

"No use," was the doleful response. "The well is drilled in and she's dry. My folks and I had planned to go to Germany this fall and visit our old home, but now we can't go. My poor wife! My poor children!"

The scouts expressed sympathy and accompanied Mr. Roth to Garfield, where they wired their chiefs that the Mehoopany had been drilled in and showed for a good well. Dr. W. P. Book, a partner of Mr. Roth, hearing about what the scouts had telegraphed, wired an angry message to Mr. Roth, taking him to task for giving out information. Soon afterward Mr. Roth met Mr. McMullen and accused him of making false reports about the well. "Didn't I tell you the well was dry?" he demanded.

"Yes, that's what you told us," returned the other. "But we saw the oil on the rope and we saw you drive in the plugs."

"A man can't have any business to himself any more," groaned the puzzled oil man. "Oh, you scouts!"

As it turned out the Mehoopany, upon being drilled deeper into the sand, proved to be a small well, defining the limits of the Cherry Grove area.

It is related that Jo was riding to a United Pipe Lines telegraph office a half mile distant to wire a report on the Schultz well in the Cooper Field in January, 1883, when he overtook Jim Tennent walking to send in his report. Jim, averse to being beaten, seized the tail of Jo's horse. Jo whipped his mount, but failed to shake off his uninvited guest, who hung on grimly and bounced, rather than ran, at the horse's heels till they reached the shanty used as a telegraph office. Jim got to the telegraph operator before Jo could tie his horse, filed his brief message promptly and surveyed his rival triumphantly as the younger scout entered the doorway.

But Jo was not to be outgeneraled so easily. "Pipe line business must go first," he announced.

Jim Tennent and the operator eyed him, the formerly belligerently and the latter questioningly.

"I mean what I say. It is a rule of the company to take care of pipe line business first. My message is directed to Capt. J. J. Vandergrift, president of the United Pipe Lines."

All the Operator Needed to Know

That settled it. The telegraph operator had no desire to get into trouble with his own boss. Captain Vandergrift, senior member of Vandergrift, Young & Co., who employed Jo, was head of the pipe line company also, and by the simple expedient of addressing his report to Captain Vandergrift instead of to Mr. Young, Jo outwitted the scout who had sailed in on a horse's tail.

In 1885 Mr. Cappeau and J. W. Craig, of Pittsburgh, Pa., formed a partnership which operated in the oil fields of McKean, Butler and Washington Counties, Pennsylvania, and in West Virginia. The two drilled the No. 1 McDade, which opened the Kane Field in Elk and McKean Counties. Mr. Craig was credited with being the heaviest individual trader in oil certificates. The partnership was dissolved in 1887, and after that Mr. Cappeau operated alone in Eastern fields, meeting with moderate success. In 1909 he went to South America to examine certain oil properties for New York men and report on them, staying there several months. Requests for his services increased and in 1910 he began devoting most of his time to making surveys of oil properties. He opened an office in Pittsburgh and he remained there till 1919, when he moved to New York, there continuing his work as a valuation engineer.

Mr. Cappeau, who as his name indicates is of French descent, was born in 1861 in Baltimore, Md., and at the age of 7 was taken by his parents to Williamsport, Pa. The family remained there a year only, then going to Oil City, where the boy entered school. In 1886 Mr. Cappeau married Miss Ida M. Jack, of Butler, Pa. They have a beautiful home in Water Mill, Long Island, where they pass their summers. Their two sons, John W. Cappeau and Jo P. Cappeau, Jr., established the brokerage house of Jo P. Cappeau Sons in Pittsburgh 22 years ago and maintained it, specializing in oil and gas securities, till 1930, when Jo P. Cappeau, Jr., died. John W. Cappeau soon afterward joined an eastern investment house. Since the death of his son, Mr. Cappeau has passed much of his time in Tulsa and he has continued to keep himself familiar with new oil fields as they have been opened.

APPEAL TO CONGRESS URGED ON NEW TAXING PROPOSALS

NEW YORK, Apr. 4.—W. R. Boyd, Jr., executive vice president of the American Petroleum Institute, has sent a telegram to a large number of oil company executives, managers of other oil trade associations and oil trade papers urging immediate contact with Congress.

The Federal Revenue Bill will not, of course, become law until it is formally enacted by both Houses of Congress. What the House of Representatives does is by no means conclusive or final. There is a growing impression that the Senate Finance Committee will undertake the job of rewriting the whole bill after which, if, as, and when approved by the Senate, the House will have another shot at it.

Every citizen who has an opinion on what he thinks is the fairest and most equitable way to raise the necessary revenue should communicate promptly that opinion by word of mouth or telephone, telegram or letter to his senators and congressmen.

Mr. Boyd's telegram follows:

"Business cannot make any recovery until definite measures are adopted which will produce Federal income equal to the outgo. This is an emergency and new revenue measures should be designed for a limited period, to be effective only until the budget is balanced. Any increased tax burden is painful, but if spread over the largest possible number of payers, it can be borne without dislocating business and finance. On the other hand, recent proposals in Congress would completely discourage capital from starting new undertakings. Under the circumstances, it is the lesser of two evils for Congress to enact a general manufacturers tax along the lines originally proposed by the Ways and Means Committee. These proposals have a very definite amount of increased revenue in sight whereas substitutes offered in the past few days would undoubtedly fail to produce anything like the sum required. The board of directors of the American Petroleum Institute has resolved in favor of a manufacturers tax as a most effective and equitable means of bringing the government finances into balance during the emergency. If you agree with this conclusion please telegraph immediately your senators and congressmen, recommending the adoption of the manufacturers tax for the good of the country and what is even more important urge that similar action be taken throughout your entire organization and trade."

The members of the Senate Finance Committee, who may be addressed at the Senate Office Building, Washington, D. C., are:

Reed Smoot (R), of Utah, chairman; James E. Watson (R), of Indiana; David A. Reed (R), of Pennsylvania; Samuel M. Shortridge (R), of California; James Couzens (R), of Michigan; Henry W. Keyes (R), of New Hampshire; Hiram Bingham (R), of Connecticut; Robert M. La Follette, Jr. (R), of Wisconsin; John Thomas (R), of Idaho; Wesley L. Jones (R), of Washington; Jesse H. Metcalf (R), of Rhode Island; Pat Harrison (D), of Mississippi; William H. King (D), of Utah; Walter F. George (D), of Georgia; David I. Walsh (D), of Massachusetts; Alben W. Barkley (D), of Kentucky; Tom Connally (D), of Texas; Thomas P. Gore (D), of Oklahoma; Edward P. Costigan (D), of Colorado; and Cordell Hull (D), of Tennessee.

WEST TEXAS FIELDS

(Continued from Page 28)

It opens a new pool in the county, and an area which will undoubtedly see considerable drilling within the next few weeks.

Easter Oil Co. is planning a Canyon series test on the A. L. Churchwell farm, 2 miles north of the Chalk Hill area in Archer County. The test which is to be carried deeper is known as No. 2 Churchwell and is now standing shut down at 1,176 feet.

Guy J. Brown and others have just abandoned their No. 1 Coleman at 2,252 feet. It is located 3 miles northeast of Chalk Hill. It had no oil or gas showings.

Deep Oil Development Co. and others' No. 1 Lease 5-2 may be abandoned. It is making only 20 bbls. oil and the same amount of water from 3,615-40 feet. It was formerly drilled to a total depth of 5,750 feet and plugged back to 3,615 feet where it encountered an oil showing.

There are 14,905 wells in the Wichita Falls district, 13,793 of these incapable of producing over 10 bbls. daily.

PANHANDLE

The Prairie Oil & Gas Co. is to take 1,600 bbls. of oil per day from its own leases in the Panhandle district. It stopped taking oil in this district several months ago and is now coming back into the field as a carrier.

COMPLETIONS IN WEST TEXAS

Culberson County

Harris & Haun's No. 1 fee, abandoned location.

Howard County

Otis Chalk's No. 1 fee, dry and abandoned, total depth 1,650 feet.

Pecos County

Corvette Oil Corp.'s No. 5 J. H. Tippett, dry and abandoned, total depth 486 feet.

Jones County

Grove's No. 1 Toombs, abandoned location.

Scurry County

Simon Brook and others' No. 1 F. Kruse, temporarily abandoned, total depth 2,500 feet.

Tom Green County

G. W. Andrews' No. 1 G. W. Lewis, abandoned, location.

COMPLETIONS IN NORTH TEXAS

Montague County

O. V. Beck & Co.'s No. 1 McGaughy, dry and abandoned, total depth 1,351 feet.

Archer County

Bridwell Oil Co.'s No. 22 Oil Investment, oil sand 1,418-28½ feet, initial production 95 bbls., total depth 1,428½ feet. C. E. Jones' No. 1 Thomas, oil sand 644½-50 feet, initial production 20 bbls., total depth 650 feet. Fain & McGaha Oil Corp.'s No. 1 McCarty, dry and abandoned, total depth 1,416 feet. Gilliland & Rosser's No. 2 Walsh, dry and abandoned, total depth 1,402 feet. Perkins & Cullum's No. 2 Falls "D," sandy lime 1,148-63 feet, initial production 57 bbls., total depth 1,163 feet; No. 3 Falls, sandy lime 1,148-58 feet, initial production 58 bbls., total depth 1,158 feet; No. 1 Logan, dry and abandoned, total depth 1,232 feet. Petroleum Production Co.'s No. 1 Richardson, dry and abandoned, total depth 1,155 feet. Underwood Drilling Co.'s No. 1 Young, dry and abandoned, total depth 1,208 feet.

Wichita County

F. C. Baldwin's No. 4 Overall, total depth 1,103 feet, plugged back to oil sand 958-64 feet, estimated 15 bbls., total depth 1,103 feet. G. W. Cooper's No. 16 Waggoner Brothers, oil sand 1,529-42 feet, initial production 15 bbls., total depth 1,544 feet; No. 17 Waggoner Brothers, dry and abandoned, total depth 803 feet.

Young County

C. E. Beaver's No. 1 Jones, dry and abandoned, total depth 636 feet. N. B. Crenshaw's No. 1 Weems, dry and abandoned, total depth 590 feet. J. C. Cunningham's No. 8 Johnson, dry and abandoned, total depth 540 feet. Goffney & Meyer's No. 1 Stewart, dry and abandoned, total depth 527 feet. John Harville's No. 2 Logan, dry and abandoned, total depth 610 feet. W. S. Hawkins' No. 1 Morrison, dry and abandoned, total depth 1,012 feet. J. W. Huffman and others' No. 1 Terrell, dry and abandoned, total depth 735 feet. Kleiner, Hill & West's No. 2 Johnson, oil sand 540-55 feet, initial production 5 bbls., total depth 616 feet. W. N. Maer's No. 1 Husted, dry and abandoned, total depth 909 feet.

Rhodes and others' No. 1 Eicholberger, dry and abandoned, total depth 618 feet. D. M. Ross' No. 1 Leberman, dry and abandoned, total depth 618 feet. Rubsam & Gatewood's No. 1 Purselly, dry and abandoned, total depth 624 feet. Seitz, Comegys & Seitz's No. 1 Graham, dry and abandoned, total depth 427 feet. Stasney & Krause's No. 1 Jeffery, dry and abandoned, total depth 931 feet. C. F. Taylor's No. 1 Saunders, dry and abandoned, total depth 605 feet. United Producers Co.'s No. 1 Baldwin, dry and abandoned, total depth 776 feet. C. C. Williams' No. 1 Brown, dry and abandoned, total depth 607 feet.

COMPLETIONS IN PANHANDLE

Carson County

Continental Oil Co.'s No. 4 Black, top pay 3,015 feet, shot 240 quarts 3,011-73 feet, initial production swabbed 202 bbls. in 24 hours, total depth 3,085 feet.

Gray County

Prairie Oil & Gas Co.'s No. 1 Pope, top pay 3,100 feet, initial production 125 bbls. with 2,000,000 feet of gas, shot 185 quarts 3,170-3,265 feet, total depth 3,265 feet. Pulse-Shell Petroleum Corp.'s No. 1 Wright, top pay 2,747 feet, initial production 1,602 bbls. first 24 hours, settled to 45 bbls. per hour with 8,600,000 feet of gas, total depth 2,856 feet.

TANK WAGON CHANGES

(Continued from Page 70)

cents, and in Vicksburg, Miss., to 18 cents.

Standard Stations, Inc., reduced the gasoline retail price on April 1 to 14 cents in Portland, Ore.; to 15 cents in Seattle, to 20 cents in Spokane, and to 15 cents in Tacoma, Wash.

Standard Oil Co. of Louisiana advanced the gasoline tank wagon and station prices to 17½ cents March 29 in New Orleans and Alexandria, La., and to 19½ cents in Memphis, Tenn.

Magnolia Petroleum Co. advanced the gasoline tank wagon and station prices to 16½ cents in Texarkana and the kerosene price to 10 cents in Texarkana on March 24. On the same date these prices were advanced to 17 cents each in Fort Smith, Ark., and to 18 cents each in Little Rock, Ark., with a 2½-cent discount off the tank wagon price allowed to dealers.

Continental Oil Co. reduced the gasoline tank wagon and station prices in Albuquerque, N. Mex., March 26 to 14 and 17 cents. On March 30 these prices were reduced in Twin Falls, Ida., to 19 and 22 cents and discontinued the dealers' discount of 2 cents. On April 4 the gasoline tank wagon and station prices were advanced 1 cent in Colorado. On the same date these prices were advanced 1 cent in Cheyenne, Wyo.

Magnolia Petroleum Co. advanced gasoline tank wagon and station prices 1 cent in Texas April 1.

EAST TEXAS FIELDS

(Continued from Page 32)

production 49 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,723 feet; No. 8 W. L. Price, top sand 3,728 feet, initial production 58 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,769 feet; No. 1-C R. E. L. Silvey, top sand 3,735 feet, initial production 57 bbls. in one-half hour through three-fourths-inch tubing choke, total depth 3,759 feet.

H. L. Hunt, Trustee's No. 3 A. B. Wooley, top sand 3,691 feet, initial production 35 bbls. per hour through open tubing, total depth 3,747 feet. Lion Oil & Refining Co.'s No. 7-B Brooks, top sand 3,665 feet, initial production 60 bbls. per hour through 2½-inch tubing choke, total depth 3,760 feet. Moss & Urschel's No. 1 H. Griffin, top sand 3,639 feet, initial production 15 bbls. per hour through three-fourths-inch tubing choke, total depth 3,749 feet. I. P. O'Neal's No. 2 W. O. Alford, top sand 3,821 feet, initial production 45 bbls. in one-fourth hour through three-fourths-inch tubing choke, total depth 3,825 feet. Pilot Oil Co.'s No. 4 Finney, top sand 3,636 feet, initial production 48 bbls. per hour through open tubing, total depth 3,687 feet. Sinclair Oil & Gas Co.'s No. 1 J. W. Ashby, top sand 3,662 feet, initial production estimated 17,000,000 feet of gas, on open 2½-inch tubing choke, total depth 3,681 feet. Standard Pipe & Supply Co.'s No. 3 J. Bell, top sand 3,740 feet, initial production 100 bbls. in one-half hour through open tubing, total depth 3,780 feet. Turman Oil Co.'s No. 4 R. Dark, top sand 3,665 feet, initial production 18 bbls. in one-fourth hour through open tubing, total depth 3,724 feet. Venable-Reese & McClanahan's No. 2 J. W. Flanagan, top sand 3,645 feet, initial production 60 bbls. in 20 minutes through open tubing, total depth 3,675 feet.

Smith County

W. B. Hinton's No. 2 H. Mayfield, top sand 3,759 feet, initial production 75 bbls. per hour through three-fourths-inch tubing choke, total depth 3,763 feet. McCullock and others' No. 1 Methodist Church, top sand 3,806 feet, initial production 40 bbls. in one-fourth hour through open 2½-inch tubing choke, total depth 3,812 feet. Magnolia Petroleum Co.'s No. 6 Roy Loosier, top sand 3,711 feet, initial production 47 bbls. in five minutes through open tubing, total depth 3,720 feet.

Upshur County

Wadley & Evans' No. 1 Oliver, dry and abandoned, total depth 3,882 feet, sand 3,779-85 feet. Conservative Oil Co.'s No. 5 O. M. Victory, top sand 3,655 feet, initial production 55 bbls. in one-fourth hour through open tubing, total depth 3,670 feet.

Van Zandt County

Pure Oil Co.'s No. 2 A. E. Humphrey, initial production 40 bbls. estimated through eleven-sixteenths-inch tubing choke, total depth 2,989 feet; No. 7 M. E. Clark, initial production 249 bbls. through tubing choke, total depth 3,946 feet.

SINCLAIR AND PRAIRIE NAMES RETAINED

(Continued from Page 14)

clair Refining Co., Maine; Sinclair Refining Co. of California, California; Sinclair Refining Co. of Canada, Ltd., Canada; Sinclair Texas Pipe Line Co., Delaware; Allegany Pipe Line Co., New York; Fords Brook Pipe Line Co., New York; Sinclair Petroleum Co., S.A., Belgium; Sinclair Petroleum Co., Ltd., England; Mexican Sinclair Petroleum Corp., Delaware; Compania Terminal De Lobos, Mexico; Sinclair Cuba Oil Co., S.A., Cuba; Sinclair Cuba Navigation Co., Cuba; Pierce Oil Co., S.A., Mexico; Sinclair Coal Co., Maine; Deutsche Sinclair Petroleum, G.M.B.H., Germany; Union Pipe Line Co., New York; Venezuelan Petroleum Co., Delaware; Cordillera Petroleum Corp., Delaware; Zamora-Venezuela Petroleum Corp., Delaware; Eastern Zamora Oil Fields, Inc., Delaware; Apure-Venezuela Petroleum Corp., Delaware; Venza Oil Co., Delaware; Sinclair Central American Oil Corp., New York; Costa Rica Oil Corp., Delaware; Compania Mexicana De Petroleo "El Charro," S.A., Mexico, and the Companhia de Petroleo de Angola, Portugal. Some of the companies named above were subsidiaries of some of the other companies in the same list.

Prairie Subsidiaries

The subsidiaries of the Prairie Oil & Gas Co. owned all or in part by that company were listed as follows together with the state in which they were incorporated:

Producers & Refiners Corp., Wyoming; Delaware Consolidated Oil Co., Delaware; Community Pipe Line Co., Delaware; Keeton Oil Co., Kansas; Long Oil Co., Kansas; Prairie Oil & Gas Co., Wyoming; Eclipse Oil Co., Colorado; Parco Development Co., Delaware; Parco Oil Co., Ltd., Canada; Blackstone Salt Creek Oil Co., Wyoming; Independent Oil & Gas Co., Utah; Producers & Refiners Corp. of Tennessee, Tennessee; Producers & Refiners Corp. of Texas, Delaware; Southwestern Development Co., Colorado; Parcomis Oil & Gas Co., Delaware; The Utilities Co., Wyoming; Amarillo Oil Co., Texas; Panhandle Pipe Line Co., Texas; Amarillo Gas Co., Texas; South Plains Pipe Line Co., Delaware; West Texas Gas Co., Delaware; Dalhart Gas Co., Texas; Red River Gas Co., Delaware; Canadian River Gas Co., Delaware; Colorado Interstate Gas Co., Delaware; Clayton Gas Co., New Mexico; Natural Gas Pipe Line Co. of America, Delaware; Texoma Natural Gas Co., Delaware.

The Prairie Pipe Line Co. owned all the capital stock of the Pure Oil Pipe Line Co. of Texas.

Luncheon for H. R. Gallagher

Herbert R. Gallagher, new president of the Consolidated Oil Corp., was honor guest at luncheon given Monday at the Bankers Club in New York by Earl W. Sinclair and met leading eastern oil executives.

In addition to Sinclair officials, those present were Richard Airey, Asiatic Petroleum Co.; C. B. Ames, The Texas Company; C. E. Arnott, Socony-Vacuum Corp.; Amos L. Beaty, Phillips Petroleum Co., and president of the American Petroleum Institute; W. R. Boyd, executive vice president, American Petroleum Institute; A. J. Byles, Tide Water Associated Oil Co.; W. M. Irish, Atlantic Refining Co.; Frank Phillips, Phillips Petroleum Co.; J. H. Markham, Petroleum Corp. of America; H. L. Pratt, Standard Oil Co. of New York; E. L. Shea, Tide Water Associated Oil Co.; R. G. Stewart, Pan American Petroleum & Transport Co.; W. C. Teagle, Standard Oil Co. of New Jersey, and J. C. Van Eck, Shell-Union Oil Corp.

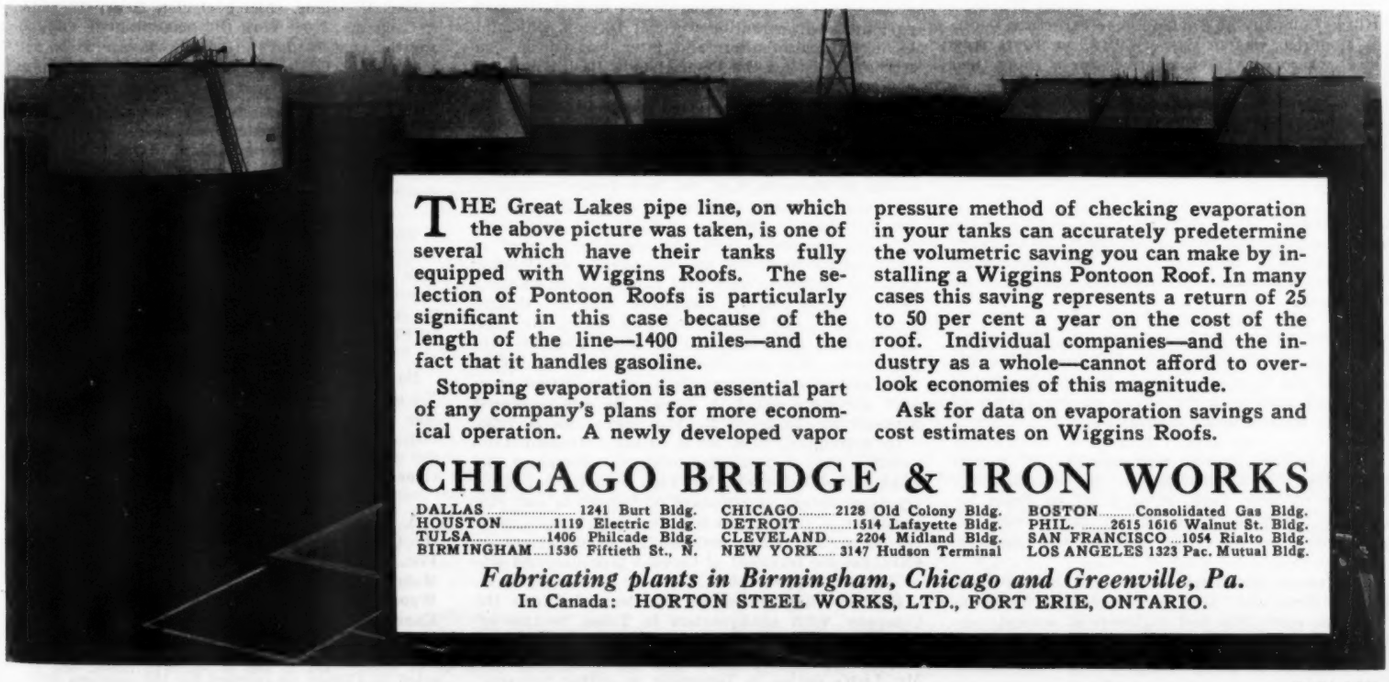
A.P.I. MEETING POSTPONED

A meeting of the American Petroleum Institute's board of directors, called by President Amos L. Beaty for April 5, has been postponed until April 11. The session will convene at 10:30 a.m. in Institute headquarters, 250 Park Avenue, New York. The date was changed in order to avoid conflict with the annual meeting of the Western Petroleum Refiners Association being held at Excelsior Springs, Mo., April 6 to 8.

Big Pipe Line Companies

know from experience the advantages of

WIGGINS PONTOON ROOFS



THE Great Lakes pipe line, on which the above picture was taken, is one of several which have their tanks fully equipped with Wiggins Roofs. The selection of Pontoon Roofs is particularly significant in this case because of the length of the line—1400 miles—and the fact that it handles gasoline.

Stopping evaporation is an essential part of any company's plans for more economical operation. A newly developed vapor pressure method of checking evaporation in your tanks can accurately predetermine the volumetric saving you can make by installing a Wiggins Pontoon Roof. In many cases this saving represents a return of 25 to 50 per cent a year on the cost of the roof. Individual companies—and the industry as a whole—cannot afford to overlook economies of this magnitude.

Ask for data on evaporation savings and cost estimates on Wiggins Roofs.

CHICAGO BRIDGE & IRON WORKS

DALLAS ..... 1241 Burt Bldg.
HOUSTON ..... 1119 Electric Bldg.
TULSA ..... 1406 Philcade Bldg.
BIRMINGHAM ..... 1536 Fiftieth St., N.
CHICAGO ..... 2128 Old Colony Bldg.
DETROIT ..... 1514 Lafayette Bldg.
CLEVELAND ..... 2204 Midland Bldg.
NEW YORK ..... 3147 Hudson Terminal
BOSTON ..... Consolidated Gas Bldg.
PHIL. ..... 2615 1616 Walnut St. Bldg.
SAN FRANCISCO ..... 1054 Rialto Bldg.
LOS ANGELES 1323 Pac. Mutual Bldg.

Fabricating plants in Birmingham, Chicago and Greenville, Pa.

In Canada: HORTON STEEL WORKS, LTD., FORT ERIE, ONTARIO.

OGJ 4-7 Gray

Personal Paragraphs About Oil Men

Tom Rush Brown, formerly of Magnolia, Ark., is now in Longview, Tex.

* * *

M. C. Luckey, of the Houston Oil Company, has left Tyler, for San Antonio, Tex.

* * *

C. N. Noble, of Tulsa, has moved to San Antonio, Tex., where he is now living.

* * *

J. H. Rounsavell, comptroller of the Signal Oil & Gas Company, has been appointed assistant secretary.

* * *

W. E. Hubbard, of the Humble Oil & Refining Company, has moved from Pampa, Tex., to McCamey, Tex.

* * *

E. L. Holloway, district superintendent for the Sinclair Oil & Gas Company, has left Seminole, Okla., for McPherson, Kans.

* * *

Cyril D. Nelson, of the Lone Pine Oil Company, Tyler, Tex., has been in Southwest Texas where he formerly operated for many years.

* * *

T. C. Skeen, executive, Columbian Steel Tank Company, Kansas City, Mo., is in New York City and eastern cities in the interest of his company business.

* * *

Miles Patton, of Fredonia, Kans., in the sales department of the Continental Oil Company, was transferred to Hannibal, Mo., where he will be in charge of the city sales.

* * *

Ashley F. Ward, president of the Wasson Hammered Piston Ring Company, Cincinnati, Ohio, has been in Tulsa and other oil field cities in the Southwest during the past week.

* * *

Floyd P. James, petroleum engineer, has returned to his home at Beverly Hills after having spent some time in Russia assisting the Soviet Government in developing its oil resources.

* * *

William Mansfield of Farmington, N. Mex., head of the Reserve Oil Company, was in Casper, Wyo., several days last week. Mr. Mansfield was one of the pioneer operators in northern Montana.

* * *

Marion Tate, tool pusher for the Rocky Mountain Drilling Company at Golden Dome Structure, southern Montana, was in Casper, Wyo., en route from Tulsa, where he visited relatives for a short time.

* * *

R. O. Armstrong, for the past few years field superintendent of the Royalite Oil Company interests in the Turner Valley Field of Canada, has been transferred to the staff of Tropical Oil Company in Colombia.

* * *

I. O. Brown and J. B. Shaw are in charge of the office opened by the Mid-Kansas Oil & Gas Company in San Antonio, Tex. Mr. Brown has been the geologist for the Mid-Kansas in Southwest Texas for several years.

* * *

Gr. Uff. Attilio Pozzo, president and managing director of the "Nafta" Societa Italiana del Petrolio ed Affini, has been awarded the title of Cavalier of the Grand Crown of the Order of the Crown of Italy, the highest order in Italy.

* * *

Harry Davies, special representative of Socony Specialties, Inc., a subsidiary of the Standard Oil Company of New York, stopped off in Tulsa recently on a trip to the Southwest. Mr. Davies formerly was president of the Superior Oil Company.

* * *

Leo Ranney, president Ranney Oil Mining Company, 26 Broadway, New York City, is in Tulsa interviewing executives and engineers of several companies on the application of his process to securing water in quantity for drilling and refining operations.

G. E. Laskey, of Wichita Falls, Tex., has gone to Ruston, La.

* * *

W. A. Jackman, representing the Henry Vogt Company, Louisville, Ky., was in Tulsa recently.

* * *

John J. Durst, for many years representative of the Oil Well Supply Company at San Antonio, Tex., has lately returned to San Antonio after a few years in the Wyoming oil fields.

Men of the Industry

Clarence H. Lieb

Clarence H. Lieb, who became president of Carter Oil Company April 1, has been associated with the Standard Oil Company (New Jersey) interests for the past 12 years. Born in Roaring Branch, Pa., Mr. Lieb graduated from Pennsylvania State University with an engineering degree in 1916. He took part in flood prevention work at Dayton, Ohio, following his graduation and later worked on construction jobs for the Pennsylvania Railroad in the vicinity of Lake Erie.

Mr. Lieb entered the oil industry in 1917, going with the Carter Oil Company as an engineer and draftsman in the company's eastern division. In 1919 he was transferred to Compania Transcontinental de Petroleo, S.A., the New Jersey company's Mexican subsidiary, and served at the Tampico office for three months as engineer and draftsman. He then became a field engineer and engaged in construction work on the company's sea loading terminal, following this with experience in the producing fields. Before Mexico's famous "Golden Lane" was killed by salt water intrusion, Mr. Lieb had become superintendent at Mata Redonda. He was made chief engineer for Transcontinental in 1924, and shortly afterwards became assistant manager, serving under J. A. Brown. He was appointed manager in charge of Mexican operations in 1926.

In September, 1928, when Creole Petroleum Corporation was consolidated with the Standard Oil Company of Venezuela, Mr. Lieb went to that country as president of Standard of Venezuela and vice president of Creole, and has remained in that country since that time, maintaining headquarters at Carapito, the terminal of Creole's pipe line and site of its new topping plant.

His new appointment as president of Carter Oil Company, with headquarters in Tulsa, became effective April 1, upon the retirement of R. M. Young For the time being, H. E. Lynam will take over Mr. Lieb's duties in Venezuela as acting manager.

F. C. van Deinse has removed his office from Los Angeles to San Francisco, Calif.

* * *

E. H. Salrin, president of Tidal Oil Company, Tulsa, is in Fort Worth, Tex., on business.

* * *

J. L. Shakeley, Frick-Reid Supply Corporation, has returned from a business trip to Pittsburgh, Pa.

* * *

J. B. Gibson, sales representative of the Birmingham Tank Company, Birmingham, Ala., was in Tulsa last week.

* * *

Burr Lambert, superintendent of the Carbon Oil & Gas Company at Dry Creek, Mont., visited Casper, Wyo., recently.

* * *

G. L. Wheatley, head of the automotive transport department of the Empire Companies, Bartlesville, Okla., is in East Tex.

* * *

Ray Miller, secretary of the Natural Gasoline Association at Tulsa, attended the Natural Gasoline Plant Operators meeting at Ranger, Tex., last week.

* * *

C. A. Prichard, purchasing agent of the Mid-Continent Petroleum Corporation, has returned from a business trip to St. Louis, Terre Haute and Cincinnati.

* * *

F. R. Coggeshall, of the engineering department of the North American Car Company, has been transferred to the company's office at Coffeyville, Kans., from Tulsa.

* * *

George Roberts, sales representative of Gilbert & Barker Pump Company, Springfield, Mass., called on oil company purchasing agents in the Mid-Continent Field recently.

* * *

Charles L. Reed, scout for the Gypsy Oil Company, with Casper Wyo., headquarters, accompanied by his son, David, and by Jack Caldwell, visited the oil fields in southern Montana last week.

* * *

J. F. O'Shaughnessy, general manager of the tire division, and E. L. Bryant, general manager, both with the United States Rubber Company at Detroit, Mich., were recent visitors to Dallas, Tex.

* * *

Earl P. Hinds, chief geologist, Henry L. Doherty & Company, New York City, has been in Oklahoma for the past 10 days attending the annual A.A.P.G. meeting in Oklahoma City and company business.

* * *

Rush M. Blodget, general manager of the Oil Producers Sales Agency, recently attended a meeting called by Governor Rolph at Sacramento but has subsequently returned to the office of the Sales Agency in Los Angeles.

* * *

Matt Q. Giffen, independent operator of Long Beach, Calif., has been elected executive vice chairman of the Southern California Independent Oil Operators, a group of independent oil men working for ratification of the Sharkey oil conservation law in California.

* * *

Bart Myers and his family are expected in Casper, Wyo., to spend their summer vacation. Mr. Myers was formerly superintendent of operations in the Salt Creek Field for Carter Oil Company and has for several years been the superintendent of operations for the Imperial Oil Company in Venezuela.

* * *

A. M. Gee has been appointed general counsel for the Ohio Oil Company to succeed the late Merle N. Poe. Mr. Gee was formerly counsel for the Rocky Mountain division with headquarters in Casper, Wyo. Recently he has been counsel for the Mid-Kansas Oil & Gas Company with Tulsa headquarters. Mr. Gee's assistant will be Hal Stewart, who was assistant to Mr. Poe and also was formerly located in Casper as counsel for the western divison.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

BEST WAY TO BACK-PRESSURE

What is the best means of back-pressuring an oil well during the process of repressuring? I mean whether to use fluid (oil or water) or to use a certain number of pound of gas pressure. Or does it matter?

We have been repressuring an oil lease in the 1,800-foot sand near Wichita Falls and all the gas that we are putting into the key well is breaking through the other wells, bringing no oil, so it is up to us to do some kind of back-pressuring. I have been advised by some to just raise the tubing, letting 10 or 12 feet of water over the sand. Others say to pull the tubing and put in a flood-nipple, so as to let the oil cover the sand. Pulling tubing in an 1,800-foot well is a rather expensive proposition, as it would be hard to tell just how much fluid to have on the sand. If one got too much fluid over the sand it would cut off production, and if you did not get your flood-nipple high enough the gas would break through. Personally I think it would be easier and much cheaper to hold a back-pressure on the sand and release only enough gas to make a nice gas-oil ratio.

This particular key well took the gas at 16 pounds pressure and a volume of 6,000 cubic feet every 24 hours. Even with this small intake volume the gas channeled through to the other wells in the course of a week's time and I was merely by-passing the gas. I think the gas traveled so quickly because there is 2 or 3 feet of dry loose sand, or drained oil sand, on the top. All the wells have been shot or I could run a string of tubing with a packer through this dry sand and turn the gas loose in the bottom of the sand that was more saturated. We carry one pound pressure of gas at the casinghead, just enough to assure a steady volume of gas to run the gas engine.

My intention in regard to repressuring this lease, unless I hear from you to the contrary, is not to raise the tubing, but to back-pressure the wells with pressure and build up my rock pressure to about 25 pounds and then release enough gas from each well until the pressure is lowered and the desired amount of oil comes in, and then try to hold a normal gas-oil ratio and recycle the excess gas by means of a compressor.

The question of whether to use water, oil or gas pressure in back-pressuring has been a source of argument around here. —F. T. W.

You have an interesting problem meriting study and thought. It probably will be necessary to gather additional data in regard to sand conditions in your property before definite recommendations can be made. Repressuring and water flooding have been discussed in various meetings of the A.I.M.E. and A.P.I. In the A.I.M.E. volume entitled "Petroleum Development and Technology, 1927," one chapter is devoted to this subject.

In the Bradford, Pa., Field, it was found that water used in repressuring or water flooding had channeled across from the input to the outlet wells without bringing any appreciable amount of oil with it. To correct this condition it was found necessary to make a careful study of the cores of the producing horizon and when this work had been completed it was shown definitely that the water had by-passed through an upper open sand member, formerly a gas sand, and in that way was not doing effective work on that portion of the sand containing the oil.

This is apparently the same condition that you have encountered in your leases and it would not seem possible to make any effective headway with either gas repressuring or water flooding until some way has been found to shut off the upper open sand member and direct the repressuring medium definitely against the saturated portion of the sand.

You state that your wells have been shot and the hole has a large bottom which makes it difficult to make repair there. Your best method of procedure seems to be to engage a petroleum engineer to make an examination of the whole project and decide the best position for the input well. This can be determined best when knowledge of the structure is obtained and correlation is made between structure and the present course of channeling.

It is suggested that you get a copy of the A.I.M.E. proceedings referred to and read carefully the articles contained in chapter V. They are: "Effect of Repressuring Producing Sands During the Flush Stage of Production," by E. V. Foran; "Summary of Repressuring Experiments in California Fields," by A. H. Bell; "Ten Years' Application of Compressed Air at Hamilton Corners, Pa., with Core Studies of the Producing Sand," by Charles R. Fettke, and "Factors Influencing the Recovery of Petroleum From Unconsolidated Sands by Water-Flooding," by L. C. Uren and E. H. Fahmy.

If old holes cannot be repaired it is suggested that new input holes be drilled. These new holes penetrating the producing formation could then be cemented off or packed in such a way as to cause the gas or water to take the desired course through a saturated portion of the formation.

It is realized that employing a petroleum engineer will add to the cost of your operations, but on the other hand it is likely to be much cheaper in the long run to have him supervise operations.

CAN TELL BEFORE THEY DRILL

I live in Greene County, Illinois. I know we have oil and gas here, for I can tell where there is oil and gas, how deep it is and how many barrels of oil the well will produce before you start to drill and how many cubic feet of gas the well will produce. I went to the Oklahoma City oil field and told them how deep it was to gas and oil and told them what they produced.

We have a better oil and gas field here in Greene County than they have in Oklahoma. There are places here where you can get gas and oil 14 feet from the top of the ground. The oil and gas rock is 1,000 feet thick. We have streams of water 300 feet in the ground. The streams of water break the oil vein. The oil well here that is 300 feet deep will produce 20,000 bbls. of oil every 24 hours. The same well will produce 45,000,000 cubic feet of gas every 24 hours.

The question I want to ask is: How far do you think a person could drill with a cable outfit before it would blow the tools out? I know for sure that we have oil and gas here. I don't think we could get very far with cable tools. All I want is to get a showing of oil. I have got places on my farm that will produce 100,000 bbls. of oil per day. The same well will produce 1,000,000,000 cubic feet of gas per day.—A. H. W.

This department confesses astonishment at your ability to discern what is underground and to tell before a well is drilled how many barrels of oil and how many feet of gas it will produce. This gift has nothing directly to do, however, with the question you ask about the use of cable tools in drilling. There is no reason why cable tools cannot be used in drilling in high-pressure gas formations. In the Cushing oil fields in Oklahoma in 1914 and 1915 work was done by U. S. Bureau of Mines engineers which showed conclusively that cable tools could be used safely in penetrating high pressure zones if the hole was filled with mud.

If you are interested in getting information about this method it is suggested that you write to the Superintendent of Documents, Government Printing Office, Washington, D. C., and ask for copies of the following bulletins and papers:

Bulletin 134, "The Use of Mud-Laden Fluid in Oil and Gas Wells," by J. O. Lewis and W. F. McMurray; 15 cents.

Technical Paper 68, "Drilling Wells in Oklahoma by the Mud-Laden Fluid Method," by A. G. Heggem and J. A. Pollard; 5 cents.

If you will study these publications you can learn a great deal about cable tool drilling and may find answers to the questions now in your mind.

WHY WAS IT CALLED THAT?

CROSS BELT

Jacob L. Meldren, who came from England, was active in developing the oil area of northwestern Armstrong County, Pennsylvania. One of his tests, the Armstrong well at the head of Armstrong Run, opened up in 1870 an oil pool almost at right angles to the main lines of proven oil horizons and it became famous for remarkable gushers. Owing to its direction this strip of prolific oil sand was named the "Cross Belt." It upset the theories of geologists and operators of the period.

IS PRODUCTION REDUCED?

In the early discussions regarding the probable effects of shutting in wells in conformity with a curtailment program it was declared by many persons that shutting in the wells would result in permanent loss of production. Has the industry learned anything definite on this point?—E. G. S.

With the advances made in the art of producing oil and gas much of the old fear that to shut in a well meant all future production would be lost is being dissipated. Good production practice now assures that a well may be shut in for an indeterminate period without serious injury. When it is put on production its status is found to be about the same as it would have been had it been produced constantly.

The foregoing statement takes into account the fact that wells edged in by water in the producing horizon may go to water while shut in, but it has been observed in fields where enforced shutdowns have occurred that such wells would have gone to water in any event even if produced, so it is assumed that the main consideration to be given to the matter of operating a property is that which deals with the economic phase of production.

If a well cannot be produced at any given market price for oil it should be shut in and not be opened up again for production until the price of oil is such as to permit it to be operated at a profit. To keep a well on production when it is a losing proposition is not good business.

Engineering and production practices have advanced so during recent years that wells closed in may be brought back on production if desired, or they may be so handled during the shutdown period as to insure that the pool or lease will be in the best possible condition when production is resumed later.

It is necessary to have complete information about a well in order to predict what may happen to it when it is shut down. Under certain conditions it may be best to plug and abandon certain wells in a lease to prevent water movement within the sand, and even when that has been done it is possible for the lease still to make as much oil after a shutdown period as it did before, sometimes more.

Executives no longer insist that a property be produced regardless of economic conditions for they have learned through many experiments that it is better to shut down a property if no longer profitable than go on bringing oil out of the ground just because it can be produced.

GAS AND PASCAL'S PRINCIPLE

I have found "Pascal's law" referred to in articles I have been reading on natural gas. I would like to know what this law is. Can you tell me and can you tell me who Pascal was?—D. W. S.

Pascal's law, or principle, is that the pressure in a fluid not acted upon by outside forces is the same at all points, or that a fluid transmits pressures equally in all directions. Blaise Pascal, French mathematician and author, lived in the seventeenth century. He is credited with being the first person to attempt a philosophy of mathematics. In accordance with Pascal's law the gas pressures in the various parts of a "continuous and connected reservoir" are almost equal. The total pressure acting upon any definite portion of the surface is equal to the pressure exerted by the depth of fluid plus the effect of the outside pressure which is transmitted by the fluid.

Natural Gas Industry Developments

COMMISSION BLOCKED ON OKLAHOMA RATES

The members of the Oklahoma State Corporation Commission have reached no agreement on reduced rates for the Community Natural Gas Co. and the Lone Star Gas Co. of Texas, on which hearings were concluded about a month ago, and Commissioner C. C. Childers has announced he will ask the commission to order a complete appraisal of the properties of the Community Natural, which serves 26 cities and towns.

Paul A. Walker, chairman of the commission, has signed an order to reduce rates from 76 to 62 cents at the burner tip and from 40 to 28½ cents at the gate, but to become effective the order must have another signer and Mr. Childers and E. R. Hughes, other members of the commission, have announced they favor different rates.

Mr. Childers said he favors a burner tip rate of 45 cents, the same as charged in many Oklahoma cities by the Oklahoma Natural Gas Corp. and other companies, with a gate rate of 25 cents. Mr. Hughes has announced he favors a burner tip rate of 68 cents.

Mr. Walker said: "The present rate of the Community Natural, on its face, is exorbitant. A 62-cent rate is higher, in my opinion, than should be necessary as a permanent proposition, but it is a rate which could be sustained on attack in the courts, and it might commend itself with such fairness to the company as to persuade its adoption without further litigation."

In his order, Mr. Walker fixed the rated valuation of the Community Natural properties at $1,311,328, and those of the Lone Star Gas Co. at $50,150,142, a reduction of about $20,000,000 below the figures listed by company officials at recent hearings.

Mr. Walker said he would like to see a rate of 45 cents per 1,000 feet, but the record in the case warrants a reduction only to 62 cents. In attempting to make valuations, he said, the Lone Star Gas Corp. of Pittsburgh, Pa., and the Lone Star Gas Co. of Texas are "mostly out of reach" of the commission.

Mr. Childers said the trouble was the commission accepted the book values and made no valuation of the Lone Star properties for itself. He declared the valuation has been increased by the company from $12,500,000 to about $70,000,000. He said the mains of the company are rated at 96.58 per cent perfect although some of them have been in the ground 15 or 20 years.

Leon Hirsh, special counsel for Governor Murray in his attempt to oust the Lone Star companies from Oklahoma, said though the district court at Waurika had ruled against the ouster, notice was given of appeal to the state supreme court. He said the ouster action pending in the courts is the method which Governor Murray and he hoped would cut the "red tape" of a rate hearing and "accomplish desired results."

SHIDLER RATE CUT

A voluntary reduction of 7 cents per 1,000 cubic feet in gas rates at Shidler, Okla., resulting in a reduction of domestic rates by the distributing company, was made in the State Corporation Commission by the Utilities Production Co. Agreeing to the reduction, Shidler citizens dismissed a complaint filed against the Oklahoma Power & Water Co., the distributing firm.

The gate rate was lowered from 25 cents to 18 cents per 1,000 feet by the production company and the consumers' rate was decreased from 57 to 52 cents by the power and water company.

DISTRIBUTION OF NATURAL GAS IS ANALYZED BY ENGINEER

By R. W. Hendee
Vice President, Oklahoma Natural Gas Corp.*

The natural gas industry has grown in the space of a few years from an infant to a position of prime importance in the economic and business picture of the entire country.

In the expansion which has taken place many markets formerly served with manufactured gas have been supplanted either in part or entirely by natural gas and with the resumption of business in general throughout the country many new projects will spring into being.

While modern conveniences have been known to the women of the larger cities for many years, there are 5,000,000 women who live in small towns of less than 5,000 population. It is to these homes that natural gas mains are being laid to fit into a program which involves nearly 40 states in the nation.

At present natural gas from 55,000 wells is serving 22,000,000 people in 4,500 communities through 72,000 miles of gathering and main lines and 50,000 miles of distribution lines. This vast system of wells and pipe lines represents an investment of nearly $2,000,000,000.

Improvements in pipe manufacturing have allowed the gas engineer to stretch out farther and farther from the gas field to new markets. As a result a new era in pipe lines was started in 1926 with a 22-inch line to Baton Rouge, La., and a later extension to New Orleans. Since that time large lines have been constructed to such points as Birmingham, Atlanta, Memphis, St. Louis, Des Moines, Chicago, San Francisco and many others. During the past year three projects, each costing over $40,000,000 have originated in the Panhandle of Texas and have reached out around 1,000 miles for their markets.

Production

There are two common terms used in connection with gas wells and it is well to define them. These are "open flow" and "rock pressure." The pressure of the gas in the pore space is called "rock pressure." The amount of the original rock pressure depends upon the depth of the sand below the earth's surface, and usually corresponds to approximately 40 pounds per square inch for each 100 feet of depth below the surface.

An inherent characteristic of any gas is its tendency to expand. That is, no matter what the size of the container, any gas will expand and fill the container. When the drill penetrates the gas sand, this tendency causes it to rush to a point of lower pressure and naturally it will flow up through the casing or tubing into the atmosphere. The rate of this flow is called the "open flow" of the well and is usually expressed in cubic feet per 24 hours.

Transmission

If this gas, instead of being allowed to flow into the air, is confined in a pipe from the mouth of the well through a meter and into other pipe lines, we have what actually takes place in a natural gas system. It is this same inherent tendency of the gas to expand that propels it through the line to a point of delivery, provided the pressure at the point of delivery is lower than the rock pressure of the well.

The transmission system of any large gas company may be compared to the branches of a tree. From each individual well lines run out to meet other well lines and these in turn run into larger gathering lines. The latter finally feed into small main lines and thence into the large trunk lines which connect with the large cities. As many as 200 wells are sometimes connected in one field and very often 30 to 40 fields are tapped by one system.

The design of this network of lines is an engineering problem and one that must take into account the future demands. The serious and difficult situation that must be met in building a natural gas system is taking care of the peak load. The demands for gas are so much greater in winter than in the summer that it is necessary to build a plant with a capacity large enough to take care of the largest load for the pipe lines themselves constitute the only reservoir available to meet all demands. In fact the system must handle the peak hour which is sometimes 20 times the normal summer rate.

Flow of Gas Explained

So far we have assumed that the rock pressure is sufficient to propel the gas from the well to the ultimate delivery point. This is very true when the deeper wells are first drilled, but as the gas is removed from the sand the remaining gas expands, still keeping the reservoir full, but at a constantly declining pressure. To explain the flow of gas very briefly, we might assume a pressure of 300 pounds in the field and at a distant city 50 pounds. If the line is tight no gas is lost and the same amount is delivered as was admitted through the field meter. This loss in pressure is the factor which has caused the gas to flow. When the gas left the well at 300 pounds its effort to expand was measured by that pressure. The pressure may be explained as the activity of the molecules of the gas bounding against each other and against the walls of the pipe. As they travel along, confined by the pipe, the friction caused by bumping against the walls of the pipe has gradually diminished the activity and thus the pressure. So we see that the intake pressure, discharge pressure and length of the line are factors in the flow of gas. Another factor is the size of the pipe. Hence, as the rock pressure declines one of two things must be done, either the size of the line must be increased or else the original pressure must be revived. Usually the cost of an entirely new line is excessive so the pressures are restored by means of a compressing station.

You are doubtless all familiar with the hand pump used to inflate an automobile tire, in which the pressure of the air is raised from that of atmosphere to 20, 30 or 40 pounds as required in the tire. A natural gas compressor operates on precisely the same principle, and takes the gas from the lines at whatever pressure they are capable of and raises the pressure to that required to propel the gas to the next station. The sole purpose, then, of a compressor station is to restore the original pressure of the gas by forcing it to occupy a smaller space and is not, as some believe, to pump air into the lines.

It might be of interest to you to know that every foot of gas taken into the lines is measured at the wells through a field meter, that it is again measured at junctions of main lines, again at the city borders and finally through the domestic meters with which you are all familiar. This measurement gives the operators an exact idea of any loss or shrinkage which may and does occur. It is almost impossible to make a system gas-tight, but from the shrinkage figures a leaky piece of line is soon located and may then be repaired or replaced.

Distribution

This brings us to the last division, that of distribution and it, in turn, is the division which delivers the gas to the burner tips of the furnaces and stoves.

The distributing system may be divided into two subdivisions, namely the intermediate or medium and the low pressure systems. The high pressure lines from the fields usually deliver gas at pressures of from 50 to 150 pounds and encircle the outside limits of the city. At convenient points gas is fed through a device known as a pressure regulator into the intermediate system which crosses and criscrosses the city. From this system other regulators reduce the pressure to the low pressure mains which feed directly through the service lines and meters into your houses. It would be wonderful for the gas company if the gas could flow directly into the consumers' appliances at the necessary pressure but to maintain an even pressure mains of enormous size would have to be used. The gas company on the other hand maintains this even low pressure by using the intermediate and high pressure lines as a reservoir. By holding sufficient pressure on the high lines the intermediate can thus be boosted and it in turn buoys up the low pressure system.

There are many problems connected with the distribution division but perhaps the hardest to cope with is to see into the future far enough ahead in such a city as Oklahoma City so as to design the system to take care of the tremendous increase in population and hence consumption.

*Before Oklahoma City Chamber of Commerce.

HEARING IN CHICAGO ON MIXED GAS RATES

CHICAGO, Apr. 4. — Hearings on gas rates before the Illinois Commerce Commission have gone on for months, but counsel for Chicago are still cross-examining the gas company's witnesses. Not until afterward will they decide whether to attack the new rates. Meanwhile they are merely investigating, and experts for the commission are making private estimates.

Protests are being filed with the Peoples Gas Light & Coke Co. against the temporary experimental rates ordered by the commission following the introduction of natural gas.

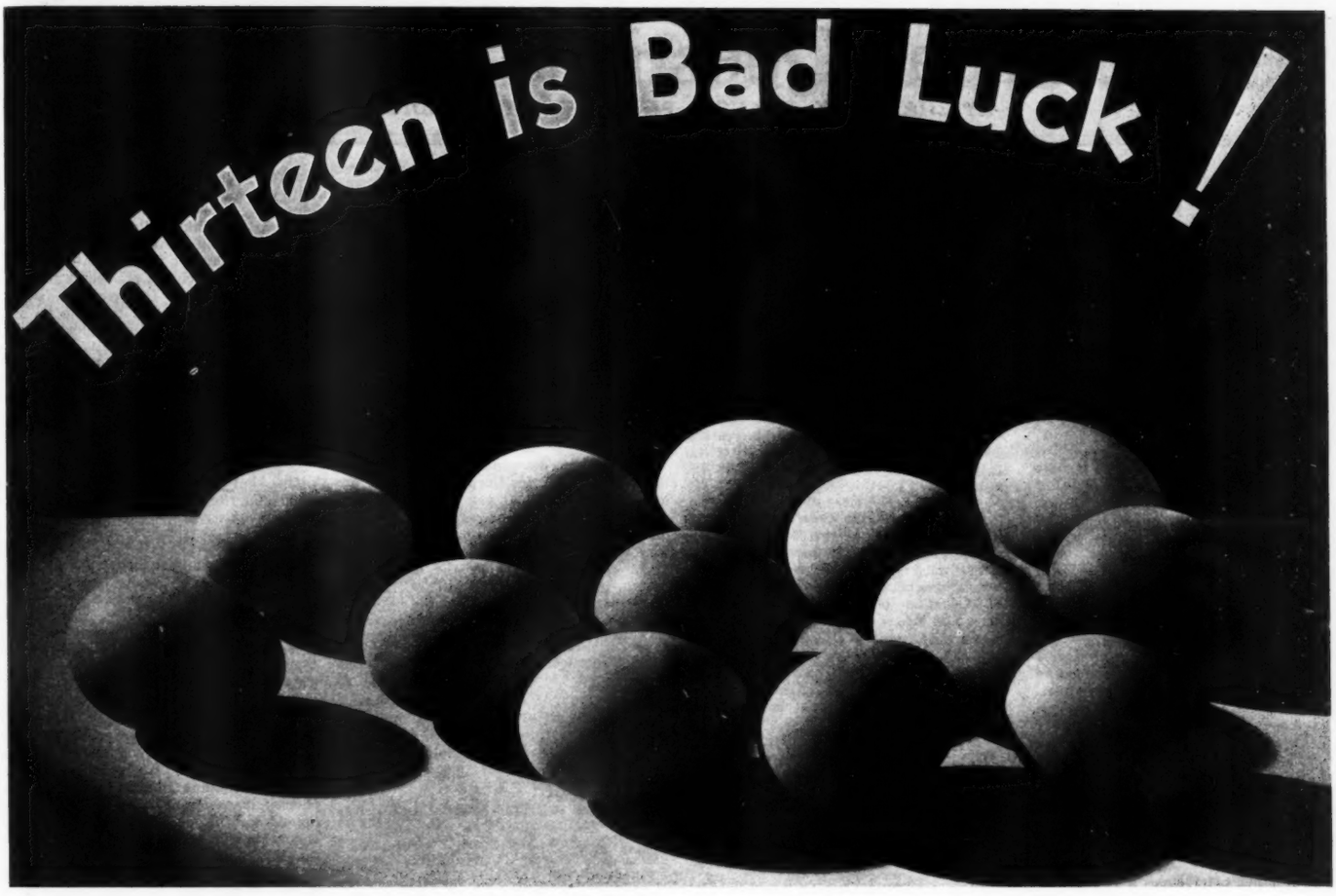
The new rates purported to reduce cooking costs 6½ per cent for the mixture of natural and manufactured gas.

Thirty-one other Illinois cities have filed protests before the commission, asserting their charges should be lower.

In Chicago the Peoples Gas company asserts consumers are either using more gas than usual or wasting it through incorrect use. Financial conditions have forced more families to eat at home, thus adding to gas bills, the company says, and bills are always higher in the winter. It also points out that consumers may be misled by the new thermal system of computing bills, which replaced the cubic foot basis last August.

ITALY MAY DEVELOP NATURAL GAS FIELD

NEW YORK, Apr. 4.—Plans for the development of Italian natural gas fields in northern Italy, proposed by American interests, are under consideration by the Italian government, according to reports from Italy. The development plans include the deepening of wells located last year in the vicinity of Salsomaggiore and Fontevivo and the construction of pipe lines to make this gas available in neighboring cities and possibly as far as the Milan industrial area.



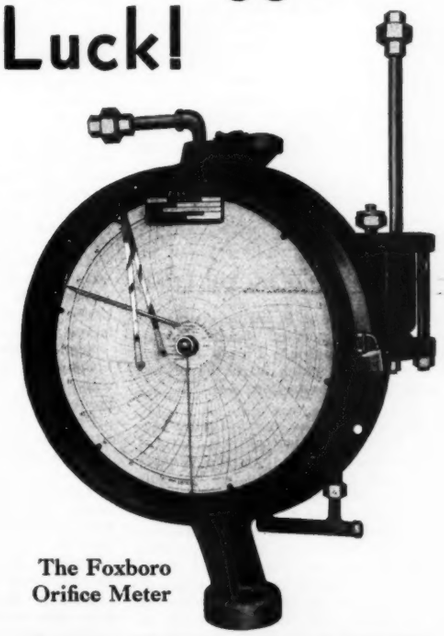
The Man Who Delivers Thirteen Eggs for A Dozen Is Out of Luck!

More so is the gas man who delivers thirteen hundred cubic feet of gas and gets paid for only twelve hundred—because you *can not count* gas as you do eggs.

Just figure it out for yourself. Assume you sell 120,000 cu. ft. of gas a day at 40 cents a thousand—and deliver 130,000—that's a loss of $4.00 and multiplied by 365 days it equals $1460.00 a year.

But it is not necessary for this loss to continue. Gas *can and is* being measured accurately day in and day out with Foxboro Meters. Because of its STRAIGHT LINE Motion the Foxboro Orifice Meter will maintain its extreme accuracy *longer than any other.* Records show this and we stand ready to prove it any time and any where.

If you buy or sell gas our new Bulletin, "Orifice Meters for Gas," No. 176-J, should be on your desk. Write for it today.



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Instruments for Controlling, Recording and Indicating Temperature, Flow, Level and Pressure

Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas, and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

BOOKS ON NATURAL GASOLINE

Will you please give me a list of the best books and other publications on the manufacture of natural gasoline from casinghead gas?—C. O. M.

The books mentioned below give information about the manufacture of natural gasoline. Consult the regular issues of The Oil and Gas Journal. See special publications of the U. S. Bureau of mines.

Recovery of Gasoline from Natural Gas by George A. Burrell, published by the Chemical Catalog Co., 19 East Twenty-fourth Street, New York, 1925.

Natural Gasoline; Testing, Manufacturing and Properties by G. G. Oberfell and R. C. Alden, printed by W. B. Conkey Co., Chicago, 1924.

Handbook of Casinghead Gas by Henry P. Westcott, published by Metric Metal Works, Erie, Pa., 1922.

CHEMICALS USED IN TREATING

What is the trend in refinery practice as it affects the amount of acid and alkali used in treating? Please mention any new process which might be of importance in this connection?—G. L.

While we have no exact figures reflecting the quantities of the several chemicals used in refining, the general reports show a tendency to use less sulphuric acid but more caustic soda. The modern fractionating towers make it possible to produce a gasoline of excellent quality, free from color, and consequently there is little need for the acid treatment. Another factor is the adoption of a high knock rating for the gasoline so it is desirable that the compounds of antiknock value be retained and not be lost through the action of acid. Every effort is made to accomplish the necessary purification through the distillation unit and by supplementing this with filtering in preference to the use of acid. Acid is seldom used for the treating of either gasoline or kerosene.

The sweetening operation, doctor treatment, has been subjected to much investigation and considerable progress has been made in the removal of corrosive compounds from the better grades of gasoline through the application of larger quantities of the alkaline solution. The use of alkali and the doctor solution is expanding in the purification of natural gasoline.

The zinc chloride method for continuous vapor phase treatment of gasoline seems to offer considerable promise. This method was described in The Oil and Gas Journal, November 12, 1931, page 30.

PROGRESS GULF COAST REFINING

Is there a trend toward an increasing quantity of crude being carried to the Gulf Coast and there refined, or the opposite?—G. L.

Data are available covering the quantity of oil refined in the Gulf Coast refineries since 1918. The total quantity of oil run each year to the stills at Texas and Louisiana refineries located in the Gulf Coast has been reported by the U. S. Bureau of Mines as follows:

CRUDE OIL RUN TO STILLS OF GULF COAST
(Barrels of 42 gallons)

Year—	Coastal Texas	Coastal Louisiana
1918	41,539,000	21,321,000
1919	49,227,000	19,584,000
1920	61,095,000	21,312,000
1921	67,355,000	25,406,000
1922	78,032,000	27,176,000
1923	81,362,000	32,672,000
1924	84,033,000	36,754,000
1925	108,325,000	50,758,000
1926	119,927,000	51,505,000
1927	130,003,000	50,413,000
1928	137,980,000	52,865,000
1929	153,380,000	50,651,000
1930	154,912,000	40,835,000
1931	154,810,000	40,022,000

It is shown that there has been for the entire area a large increase in the volume of oil refined, but the quantity run in the Louisiana plants during the last two years is approximately 20 per cent less than the total for 1925. The total run for the United States in 1925 was 739,920,000 bbls. and for 1931 was 893,622,000 bbls.

U. S. FUEL ADM. AIR COMPRESSOR AND GAS ENGINE OIL

Would it be possible to furnish the specifications for air compressor and gas engine oil which were required for railroads during the War? A specific reference to the authority would be of value.—A. L. C.

The Standard Code for Testing Lubricating Oils, Oil Division, U. S. Fuel Administration, publication 4031, page 23, 1919, gives the desired information. The following is a brief outline:

Scope—Two grades, A and B.

Color—Light amber. Max. color 25 yellow and 3 red in one-quarter-inch Lovibond cell.

Purity—Free from water, fatty oil, and all foreign substances.

Flash—Grade A not below 410° F. Grade B not below 350° F.

Viscosity—Saybolt Universal Viscosimeter. Both grades min. 40 at 210° F. Both grades 180 min. and 400 max. at 100° F.

Gravity—Grade A not heavier than 30°. Grade B not lighter than 30°.

Acidity—Both grades max. 0.25 per cent when calculated to oleic.

Cold test—Max. Grade A, 10° F. Grade B, 0° F.

Emulsification—Negative with water.

Stability—Shall not show precipitation when heated to 450° F. at a heating rate of 15° per minute and held at this temperature for 5 minutes.

Carbonization—Shall not show more than 0.1 per cent carbon deposit when heated to 425° for 6 hours; or 0.1 Conradson carbon, and the residue shall be loose and flaky.

KNOCK RATING AROMATIC HYDROCARBONS

Could you give me the names of the aromatic hydrocarbons, other than benzol (benzene), that have a good antiknock value? If you could furnish the equivalents in Ethyl Gasoline it would be appreciated.—B. E. A.

The knock ratings of aromatic hydrocarbons were reported by D. A. Howes and A. W. Nash in the Journal of the Society of Chemical Industry, 49, No. 1, p. 16T, 1930. The aromatics used were those with boiling points within the distillation range of gasoline. The knock ratings were determined, by means of the General Motors Corp. test engine, on concentrations of 20 per cent in a California gasoline as compared with blends of ethyl fluid in the same kind of gasoline.

In the original paper the distillation points are shown on a 10° C. basis; these have been converted to the approximate equivalents on a percentage scale and expressed in degrees Fahrenheit.

Properties of California Gasoline	
Gravity, A.P.I.	61.5
Distillation:	
Initial, °F.	127
10 per cent off	167
50 per cent off	267
90 per cent off	311
95 per cent off	338
Max.	377
	Per cent
Aromatic content	12.5
Unsaturateds	1.3
Naphthenes	13.5
Paraffins	72.7
Copper dish	(*)

*Black deposit and gum.

The results obtained are shown in the table. The quantity of the aromatic hydrocarbons used was 20 per cent in each experiment.

Knock Ratings Aromatic Hydrocarbons	Vol. of ethyl fluid per gal. of standard gasoline c.c.
Benzene	2.1
Toluene	2.75
o-Xylene	3.2
m-Xylene	4.0
p-Xylene	4.2
Ethylbenzene	3.8
Isopropylbenzene	2.6
p-Cymene	4.2
sec.-Butylbenzene	1.8
tert.-Butylbenzene	3.2
tert.-Butyltoluene	3.8
tert.-Amylbenzene	3.2

The most effective of these aromatic hydrocarbons was para-xylene and the poorest was the secondary-butylbenzene. In general the p-disubstituted benezenes are the best antiknocks, e.g., p-cymene, p-xylene and p-tert.-butyltoluene. Tertiary groupings appear to have a better effect than secondary groups; e.g., tert.-butylbenzene is more effective in reducing knocking than sec.-butylbenzene.

HEAT RESISTING QUALITY OF LUBRICATING OILS

Is any equipment available, preferably at low cost, suitable to a gas station that will test the heat resisting quality of lubricating oils? Who makes it?—G. M.

What is known as the volatility test for lubricating oil was described on this page in The Oil and Gas Journal, February 19, 1932. The purpose of this test is to show the quality of oil distilling off up to 760° F., as reflecting the quality of the oil on the basis of temperature to which the oil has been heated in the refining process and freed from the lighter lubricating fractions.

The simplest test for use in determining the heat resisting quality of an oil is the flash test. When the flashpoint is in question, the oil should be tested by an expert who will use the official A.S.T.M. apparatus and method, but when it is simply a question of showing the decomposition point, any suitable open cup will serve if the same precautions are observed as specified in the standard methods for making flash tests.

In the absence of any low boiling product, the flashpoint will indicate the temperature at which the oil begins to break down. This is an important consideration when a lubricating oil is to be used under conditions where explosions and fire are possible as a result of the formation of the hydrocarbon vapors.

The apparatus indicated may be purchased from any of the numerous dealers in laboratory apparatus.

PURIFICATION OF HELIUM

On what principle are the government plants for the retreatment of helium from airships operated?—W. I. R.

The U. S. Navy Department finds it necessary to establish helium purification plants because no fabric has yet been found which will completely exclude air from the airship cells containing the precious helium. The cell walls are now made of several layers of latex with a filler of gelatine between each two layers. This material contains no perceptible pores through which air could leak, but minute quantities of air do find their way through, perhaps by mixing with the fabric coating and becoming free again on the other side. The very small quantities of air thus admitted are very important, however, for impurities amounting to only 1 per cent, in the helium make a difference of almost 2 tons in the lifting power of the airship.

The specification for the plant soon to be constructed at Sunnyvale, Calif., requires that carbon dioxide shall be removed from the helium through the use of lithium hydroxide, a chemical used in alkaline storage batteries. Lithium hydroxide has never before been used commercially for this purpose. Methods used formerly for the removal of carbon dioxide made use of sodium hydroxide.

The specifications require that the helium shall be made at least 98.5 per cent pure. The Navy has recently been able to attain a purity higher than 99 per cent by the new process, whereas previously 98 per cent had been considered satisfactory.

REFRIGERATION TRANSFER MEDIUMS

Are there any other substances suitable for use in refrigeration systems besides salt and calcium chloride brines?—J. G. L.

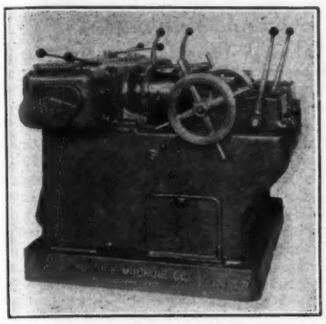
Common salt, sodium chloride, and calcium chloride are both easily obtained in large quantities at a low cost and when dissolved in water furnish a medium for conveying refrigeration which does not solidify itself. Any noncorrosive liquid, with a low enough freezing point and available in sufficient quantities at low cost will answer as a transfer agent of this kind. However, so far as we are informed, there is no substance widely distributed which will meet these specifications. A saturated solution of calcium chloride may be used down to its freezing point, which is –54° F., and the salt brine down to about 5 degrees below zero.

Temperatures down to –50° are used in the dewaxing of lubricating stocks and the dewaxed oils obtained have been mentioned as a cooling medium to replace the more corrosive brines. While such oils are not generally available at low cost they may be used to a limited extent, especially in the refinery refrigeration plant. The advantage is a high rate of heat transfer and the total elimination of the corrosive nature of the calcium chloride and salt solutions.

Oil Industry Equipment and Supplies

THREADING MACHINE CAN PRODUCE NIPPLES ALSO

The Landis Machine Co., Inc., Waynesboro, Pa., announces the 1¼-inch Landmaco pipe and nipple threading machine. This machine is designed to meet the demands of nipple manufacturers for a modern threading machine with exceptional



wearing qualities and a capacity for producing nipples of greater accuracy at a lower cost.

The machine is made in the single and double head models and is equipped with either externally or internally tripped Lanco pipe and nipple threading heads. Its range is one-eighth-inch to 1¼-inch with the externally tripped head and one-quarter-inch to 1¼-inch with the internally tripped type.

A single pulley drive with a friction clutch control delivers the power to the machine. The clutch is mounted on the outer end of the driveshaft, where it is accessible for the ordinary maintenance adjustments. The machine can be motorized at any time by mounting a suitable motor in the motor compartment in the bed and connecting it to the driveshaft with a silent chain.

The gear box is of the selective type with eight speeds. It is built into the headstock and is fitted throughout with antifriction bearings. The gears, made of hardened and burnished chrome nickel steel, are mounted on heat-treated alloy steel shafts. The bearings and all gears are lubricated by a flood system of lubrication.

The spindle is driven by spiral bevel gears. The bearings at the die head are oversize, preloaded, antifriction bearings. This type of bearing provides a permanent thrust load and thereby eliminates the end play which otherwise would develop.

The die head is located close to the front spindle bearing to reduce the overhang to a minimum. It may be opened and closed either automatically or by hand. The automatic mechanism operates through a trip rod and yoke with the externally tripped die head and through the reaming attachment with the internally tripped type.

The carriage, gibbed to the bed, is operated by a lever which can be located on either the right or left-hand side of the carriage. The guides are protected by guards and wipers. The guards are attached to the front of the carriage and pass under the headstock. The wipers, at the rear end of the carriage, are adjustable for wear. The guides are lubricated by felt pads inserted in the base of the carriage and fed from a central reservoir.

The vise has both horizontal sidewise and vertical adjustments, which make possible an accurate alignment between the die head and the work. The heavy rim of the vise hand wheel acts as a flywheel and reduces the effort required to grip the work. The vise jaws are driven by full bronze vise screw nuts which are renewable.

The pump, of the low-pressure gear type, is built into the bed and can be removed for inspection without disconnecting any piping. The pump is driven from the constant speed shaft in the gear box and will reverse automatically when the machine is reversed.

The bed, of semisteel, is cast in one piece. It is reinforced by an inner wall and forms a rigid support for the carriage and headstock. Large drains below the guides and also at the base of the bed return the cutting coolant overflow to the reservoir.

AMONG THE EQUIPMENT HOUSES

The Kennedy Valve Manufacturing Co. has moved its Chicago branch office and warehouse to larger quarters at 1306-1312 South Canal Street, in the Soo Terminal.

The Chain Belt Co. has appointed two new distributors to handle its line of Rex mixers, pavers, pumps, saw rigs, plaster and mortor mixers, and other construction equipment. They are the Holmes-Talcott Co., 103 Sterling Road, East Hartford, Conn., and the T. D. Harter Co., 205 North Townsend Street, Syracuse, N. Y. The Colon-Jopson Co., 750 Main Street, Hartford, Conn., has been made exclusive distributor of Rex Moto-Mixers in the Hartford territory.

E. C. Powell, formerly Mid-Continent representative for the Ohio Injector Co., has been appointed representative for the Joseph F. Schiller Valve Co., Philadelphia, Pa., in Oklahoma, Kansas and Texas. Mr. Powell's headquarters are at 1530 East Fourteenth Street, Tulsa.

George Paull Torrence, vice president in charge of the company's Indianapolis operations, was elected president of Link-Belt Co., Chicago.

E. N. Gosselin, president of the Graver Tank & Manufacturing Corp., East Chicago, Ind., has announced the appointment of W. K. Evans as general sales manager. Mr. Evans was formerly in charge of sales east of the Mississippi for the Shell Petroleum Corp.

The Western Screw Manufacturing Co., Chicago, has been licensed by the Dardelet Threadlock Corp. to manufacture and sell bolts, nuts and screws threaded with the Dardelet self-locking thread.

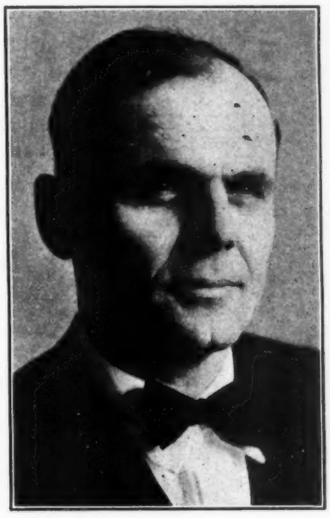
The Louis Allis Co., Milwaukee, Wis., has appointed Sterling Electric Motors, Inc., as sales representative on the Pacific Coast. The latter company will handle Louis Allis "explosion-proof" motors and standard squirrel cage motors, direct-current motors, frequency converters, inverted rotary converters, and other types of motors which will supplement the Sterling line.

Warren L. Smith, petroleum engineer of the Foster Wheeler Corp., has been transferred from the New York office to the Dallas office. Mr. Smith will devote his entire time to the refinery trade.

The Worthington Pump & Machinery Corp., Harrison, N. J., has appointed Frank R. Wheeler special sales representative with headquarters in its Chicago office. He will cover the midwest territory, assisting the Worthington organizations in Chicago. St. Paul, Kansas City, St. Louis and Detroit.

MEN KNOWN *in* THE EQUIPMENT FIELD

The Four Wheel Drive Auto Co., Clintonville, Wis., has appointed Guy H. Billings assistant general manager. Mr. Billings has served the past 17 years as



Guy H. Billings

purchasing agent. He will retain the title of purchasing agent.

Mr. Billings joined the accounting department of the FWD organization in 1913. At that time the company was only three years old and comparatively small. Mr. Billings not only handled accounting, but the receiving and shipping departments were also in his charge. In 1915 he was made purchasing agent and he has held that position ever since. He has purchased millions of dollars worth of materials.

EXPLOSION-RESISTING FITTINGS INTRODUCED

Explosion-resisting screw-cover junction boxes with universal hubs, intended for gasoline pump and similar hazardous location wiring are a part of the line of explosion-resisting conduit wiring fittings announced by the Pyle-National Co. of Chicago, in its bulletin No. 168-C. The line includes circuit breaker switch fittings, screw-cover junction boxes in both large and small series, conduit unions, light control switch fittings, and the universal hub junction boxes.

Type YT junction boxes with universal hubs have heavy cast iron bodies with heavy internally threaded overlapping brass covers. Conduit hubs are threaded externally to take one-half-inch or three-quarters-inch unions or blank caps. Top, right, left, and back hubs are uniform on all boxes. Bottom hubs are single, double, triple or quadruple, depending on the requirements of the individual installation. With this arrangement any tapping combination can be obtained without the necessity of carrying a large stock of assorted fittings.

These fittings are especially adaptable to gasoline pump installations as outlets to pump island. They are listed by Underwriters Laboratories, for use in Class 1, Group D hazardous locations.

GALVANIZED SURFACES SHIELDED BY STIBLOY

The Stibloy Products Co., Inc., with principal offices in the Koppers Building, Pittsburgh, Pa., has taken over the assets of the Liquid Metal Products, Inc., Chicago, producers and distributors, under the Arent patents, of Stibloy, a metal compound in liquid form, which acts as a primary coating to hold paint, enamel and lacquer tenaciously, permitting immediate finishing of new galvanized metal surfaces.

Stibloy was developed to extend the life of galvanized surfaces by protecting them from the effects of atmospheric conditions and from the damage caused by exposure to gases, acid fumes, smoke and brine. It is used for protecting and preserving galvanized roofing, siding, sheeting, guttering, downspouts, wire fencing, air ducts, car roofing, screens, nails, transmission towers and other galvanized products, as a primer, not a paint.

Officers of the Stibloy Products Co., Inc., control of which has been acquired by the Koppers Products Co., are: President, J. N. Forker; vice president, S. H. Bell; secretary, John D. Shaner; treasurer, S. T. Brown.

PUSH-BUTTON STATIONS

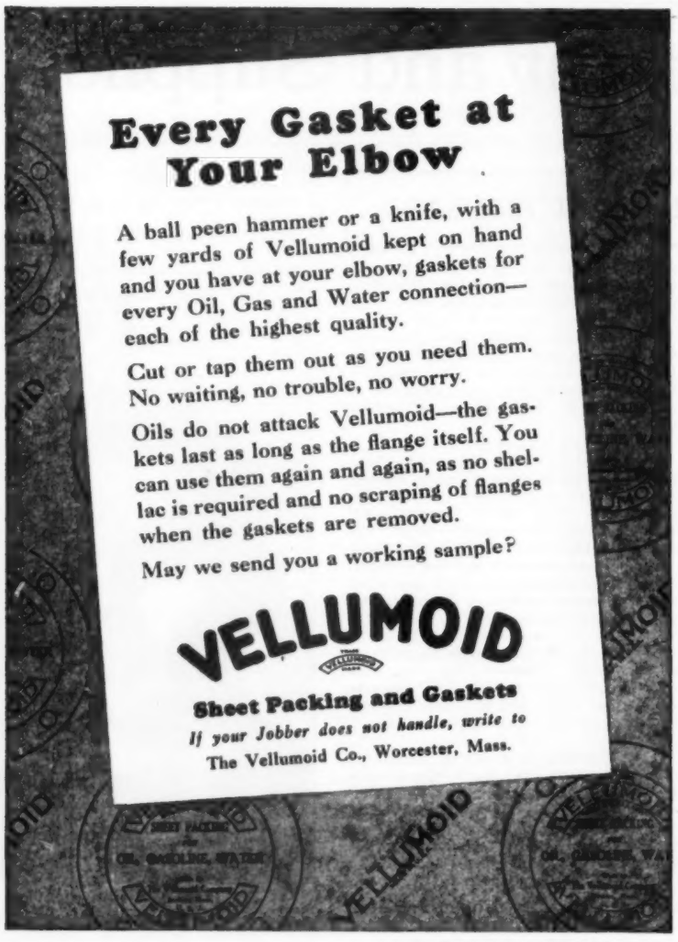
A new line of push-button stations (type CR-2940), designed for general industrial applications, has been announced by the General Electric Co. The stations are divided into three general classes—those which make momentary contact, those which maintain the contact, and a combination of both. With a momentary contact the circuit is completed or interrupted only as long as the operator's finger depresses the button. This is required when the station is used with a controller that must provide undervoltage protection. A maintaining contact holds the circuit open or closed as does an ordinary knife switch.

ALLIS-CHALMERS IN NEW HOME

The Allis-Chalmers tractor division has moved into its new five-story office building in Milwaukee, Wis. This modern structure is next door to the smaller building which served for three years as general office headquarters, but which was outgrown, particularly after the acquisition of Advance Rumely. The old building has been converted into a showroom for the Allis-Chalmers line of agricultural tractors and equipment, and the first floor of the new building serves as a showroom for track-type tractors, industrial wheel tractors, road graders, and other equipment sold through Allis-Chalmers track-type dealers. The second floor of the new building houses the credit department; third floor, executive offices; fourth floor, sales department, and fifth floor, advertising department.

PLANT FOR MAKING DULUX

E. I. du Pont de Nemours & Co. has announced that it will construct at its paint and varnish factory in Philadelphia a new plant for the manufacturing of Dulux, a recently developed finish. The plans call for a three-story and basement building 155 by 68 feet, costing $350,000. Dulux, while relatively new on the market, is being supplied extensively to the petroleum industry.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28-40 Penn Avenue Pittsburgh, Pa.

CHANGING CONCEPTS IN PETROLEUM INDUSTRY

(Continued from Page 18)

the ultimate production of pools has undoubtedly been increased largely.

TABLE 1—NUMBER OF ENGINEERING PAPERS

Year—	Total engineering papers	Gas and related papers
1925	22	1
1926	25	5
1927	30	*5
1928	20	5
1929	43	†23
1930	35	†22

*Eleven papers on air-gas lift not included.
†Includes 13 papers on unit operation.

Pool Has Three Resources

Consequent on the wider recognition of the function of gas in the development and production of oil is the concept, rapidly gaining ground, that every oil pool possesses three resources: Oil, gas, and reservoir energy. In equity the oil and gas in a particular tract belong to the owners of the mineral rights in that particular tract, but the reservoir energy is a common attribute of the pool because of the nature of its origin and existence. In origin it results from forces of compression acting on the entire contents of the reservoir. These forces may have many manifestations such as hydrostatic head, superimposed beds, or diastrophism, but in last analysis gravity, operating over a much wider area than the limits of the pool, is the cause. Reservoir energy depends on the continuity of the confining beds, so that puncturing the container at any single point affects the whole. It is more a conditioning factor than a recoverable resource. Its chief value results from work performed within the reservoir rather than work done at the surface. Compressor plants can duplicate such work as reservoir energy effects at the surface, but it is impossible to duplicate its work in the sand because oil, in the absence of agitation, absorbs gas very slowly. For these reasons reservoir energy is rapidly coming to be considered the common property of the owners of a pool.

Best operation now calls for producing the least amount of gas possible for each barrel of oil and maintaining the greatest possible amount of gas in solution in the oil in the reservoir.

Law of Capture

Probably more of the ills of the petroleum industry can be traced to the "law of capture" than to any other cause. Shortly after the discovery of oil in America, at a time when the function of gas in the production of oil was wholly unrecognized, a Pennsylvania jurist called upon to adjudicate a dispute laid down the principle that oil and gas, like wild game, belong to him who reduces them to possession. This principle was followed by other jurists and became so well established that "in the absence of legislative restraint the owner of land or his lessee may produce through his wells all of the oil and gas that he is able to extract from the reservoir beneath without regard to where in the reservoir he may draw from and that he becomes the absolute owner of all thereof that he may reduce to possession."[4] It is inconceivable that, had our present knowledge of the function of gas in the production of oil existed at the time of these early decisions, piracy would have been thus legalized.

Customs and practices within the industry in the United States follow logically this basic legal concept of ownership through capture. Obviously, offset drilling becomes mandatory. A wild rush for early completion of wells is an operator's only means of protecting his property. The development of reserves in the ground is almost impossible. No adequate protection is afforded against the waste of a vanishing national asset through overproduction. Alternate periods of feast and famine within the industry are inevitable. The owner of a valuable property must exhaust it as rapidly as possible, regardless of market conditions or his own needs, and trust to the hazardous chance of discovery for near-future requirements. Vast quantities of crude oil, subject to evaporation losses, deterioration, and heavy carrying charges, must be stored at the surface instead of being held in its native reservoir. Tremendous holdings of scattered acreage must be carried by companies against the probability that a new discovery will give to some competitor a cheaper crude supply. This "checkerboard acreage" alone costs the industry and hence the consumer many millions of dollars a year. These several customs and practices are a direct consequence of the "law of capture" which necessitates a chain of economic waste starting when the first lease is taken and ending only when the last gallon of gasoline is marketed.

Later Legal Decisions

Although the "law of capture" still stands as the basic legal concept of the industry in the United States several departures have resulted through legislative enactment and judicial decision. A chain of decisions starting with an Ohio case in 1900 and running through 1930 establishes the right of the state to regulate the taking of oil and gas so as to avoid waste and protect the several owners in a just distribution of the products of the pool[5]. In commenting on these decisions Judge German points out that "the underlying principle . . . is older than our Government. It is embodied in the ancient maxim of the common law that everyone must so use his own property as not to injure the rights of others. . . . It happens that this principle has been but recently applied to conditions in this comparatively young and now rapidly growing industry."[6]

The conservation laws are primarily aimed against waste. At first physical waste aboveground was the only kind of waste recognized and much was heard about the efficiency of the industry in this particular. Economic waste as represented by feverish development and duplication of facilities was also discussed, but not until the importance of gas in the production of oil came to be recognized did the greatest waste in the industry become apparent. With this recognition came a broadening of the activities of agencies enforcing the conservation laws.

In addition to this broader and sounder conception of waste are regulations recognizing the rights of individual owners in a pool. The ratable taking of the products of an oil pool between the several owners is now generally provided for. This is now based primarily on the capacity of wells to produce and is applied subsequent to development. It is not a long step, however, to base it on acreage content both before and after development. This is necessary if fullest use is to be made of reservoir energy.

The trend of decisions, legislative enactments and regulations is clearly away from the law of capture and toward a recognition of oil and gas in place as the basis of control, with reservoir energy as a common asset.

Energy Common Attribute

Had it been recognized early that in every oil pool there are oil, gas and reservoir energy; that the oil and gas belong to the owner of the mineral rights in particular tracts but that the reservoir energy is a common attribute of the pool to be conserved and used in the maximum production of oil; the whole trend of the industry would have been different and most of its present ills avoided. The chief difficulty in recent years has been not that the industry had too much oil in reserve but that too much of its modest reserve has been crowding on the market. In the United States, no more than a 10 years' supply is assured, and because wells decline in output from year to year, it could not be produced in that time. This is certainly a meager proved reserve when compared with minerals

[4]W. P. Z. German, general attorney, Skelly Oil Co. Petroleum Development and Technology in 1931, A.I.M.E., p. 13.

[5]For an excellent discussion with citations see paper by Earl Oliver and W. P. Z. German, The Oil and Gas Journal, July 30, 1931.

[6]Petroleum Development and Technology in 1931, p. 22.

such as copper, lead, zinc, iron and coal. It is even more disproportionate to the tremendous capital investment in the industry. The vital relation of petroleum products to modern civilization also warrants a much larger reserve. Proved reserves could not have developed even to this extent had it not been for conservation laws and their enforcement through proration. But proration, though necessary and helpful, is not a cure. A cure lies in the technical direction of development so that the characteristics of each pool can be determined and plans progressively modified as new facts regarding reservoir conditions are determined. This can be accomplished only by eliminating feverish offset drilling. Most efficient development and production can probably be accomplished only by exploring and operating each pool as a unit, hence the widespread consideration given to unit operation. Oil within a particular pool has had a common origin, has accumulated under like conditions, is of common characteristics, is confined by the same container, occupies a reservoir rock of common type, and most important of all, each part of it is charged with energy from a common source or sources. Add to this the migratory nature of oil and the loss of energy over an entire pool as any one part is depleted, and the conclusion is obvious that division of this natural unit into competitive parts is wasteful and prevents maximum use of the reservoir energy in producing oil.

Whether the solution lies in the direction of unit operation, state control, or co-operative agreements, development and production must be based on engineering deductions rather than on individual greed or expediency if maximum use is to be made of the energy factors and hence the greatest ultimate recovery obtained. Important factors are spacing of wells; distribution of wells on structure, drawing heaviest from wells with lowest gas-oil ratios; returning gas to the sand to maintain reservoir pressure and retain the most possible gas in solution; and lengthening the flowing life of wells by carefully selected tubing, chokes and beans.

Cost of Recovery

Well spacing is largely a matter of the balance sheet. The more closely wells are spaced, other things being equal, the greater will be the ultimate recovery. But as all cost finally reaches the consumer, the public is interested in finding for each pool the happy medium between maximum recovery at high cost and minimum recovery at low cost. This will be different for different pools and often for different parts of the same pool. It involves such factors as cost of wells, sand thickness, saturation, water conditions, quality of oil, and size of sand grains. Programs should be subject to modification as development proceeds and information accumulates.

Equally important with the total number of wells drilled is their distribution on structure. The relations of oil, gas and water are different in different pools. In such places as the Mexican fields and the salt domes of the Gulf Coast, water encroaches as rapidly as room is made for it by production. Elsewhere, as at Bradford, the water is essentially static. But in most fields water encroaches at a moderate rate and is a factor of some importance in expelling oil from the reservoir. In general, however, expanding gas is the dominant force of expulsion even though its energy may be traceable through geologic time to the hydrostatic head. Gas occurs both in the free state and dissolved in oil. In most structures a gas area is surrounded by oil and this by water. Elsewhere both gas and oil are limited to the same area. Further, the free gas differs in composition from the dissolved gas, and the dissolved gas may have a wide range in composition, meaning that different parts of it will leave solution at different pressure levels. All these factors have determinative value in deciding upon a program of well distribution.

It therefore follows that in each particular pool plans for well distribution, like well spacing, should be subject to modification as development proceeds and information accumulates. In general, few wells should be drilled in the central gas area—only enough for recycling of gas, later discussed — and comparatively few should be drilled near the water contact. In some instances water from the surface might be introduced along this line with good results.

Best practice calls for the greatest production of oil at the least possible expenditure of reservoir energy. It has long been recognized that the energy system is exhausted long before the reservoir is drained of oil. Petroleum mining at Weitz and Pechelbron shows that after half a century of production, at a time when wells had almost ceased to pay a profit, approximately 85 per cent of the original oil remained in the sand. Exhaustive studies incident to reclamation projects in the Bradford Field show similar results which also are confirmed by core studies in many fields.

Conservation of Energy

Probably, on the general average, recovery does not exceed one-quarter of the oil in the sand. The greatest and most practical conservation applicable to oil pools is a proper conservation and utilization of reservoir energy to the end that ultimate recovery may be increased. When the energy system has once been allowed to run down it is impossible to rebuild it fully. Gas once out of solution cannot be replaced because in the absence of agitation, oil dissolves gas so slowly as to be negligible. Repressuring of old fields makes use of the driving properties of gas rather than its influence as a modifying agent; it is helpful although much inferior to pressure maintenance started during the development stage.

Gas-oil ratio becomes a measure of operating efficiency once the characteristics of a particular pool are known. It is rarely uniform from well to well in the same pool even where identical equipment is used. Thus a careful selection of wells for production is desirable, choosing those wells that produce the least gas per barrel of oil. But the ratio for any well changes with its age, in general becoming higher as the well becomes older. Wells found to be making excessive gas should be shut in. The most desirable well for production this year or even this month may not be the most desirable next.

In the ideal operation the gas of the reservoir should not be marketed until all the oil capable of economic recovery has been removed. Gas produced incident to oil production should be compressed and returned to the sand through carefully selected wells thus maintaining reservoir pressures with the primary object of holding the gas in solution in oil not yet produced. This method is being followed more or less closely in many pools, Sugarland, Texas, being the best example. The experiments have gone far enough to prove that ultimate recovery will be increased largely and lifting costs reduced greatly although they are too young to afford complete comparative figures.

Any plan that will conserve reservoir energy will probably extend the flowing life of wells. In this way the cost of recycling usually will be returned although increased ultimate recovery is the more important consideration. The flowing life may be extended, however, in other ways than by recycling. The intelligent use of back pressure, beans, chokes and tubing of proper size are all proved by experience to be especially effective. The object of these devices is either to hold pressure on the sand face or to reduce slippage in the flowing column of petroleum.

Summary

The new concepts of the petroleum industry result largely from new information concerning the chemical and energy relationships of gas. The function of gas in the development and production of oil is the most fundamental concept in the industry. It permeates laws, judicial decisions, and practices. It modifies policies of exploration, development, production and marketing. It affects the public through conservation of a wasting resource; the producer through costs, re-

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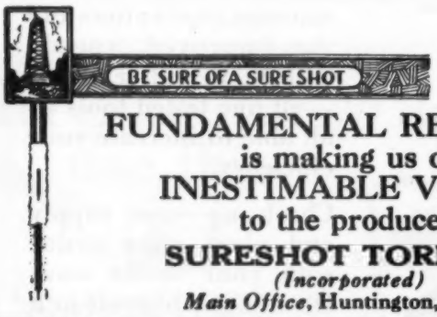

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serves and stability; and the consumer through assured supply at a fair price. A proper appreciation of the function of gas makes for reserves in the ground rather than costly and wasteful storage aboveground, and for sound conservation of oil.

The factors limiting the maximum use of gas in the development and production of oil are divided ownership and antiquated laws. The latter are undergoing important though slow modification and it is to be expected that ways will be found to co-ordinate the former. Most efficient development and operation calls for legal recognition of oil and gas as belonging to the owner of the mineral rights in the particular tract in which they occur and of reservoir energy as a common attribute of the pool to be used in the maximum production of oil. It should be clearly recognized that the individual pool is the one economic unit established by nature in the oil industry.

OXYGEN EFFECT ON H₂S GAS CORROSION

(Continued from Page 16)

abundant, the annular space between casing and tubing will generally be free from air or oxygen. However, in older fields in which the gas has been depleted, air may be drawn into the annular space because of the presence of a "vacuum." In many cases the vacuum is purposely imposed in order to increase the recovery of gas and oil. As mentioned by Lindsly and Berwald, such vacuum systems are generally not leak-free, hence considerable air can usually be detected in the gas from the annular space. An outstanding example of corrosion accelerated by such a condition is the sour field in the vicinity of Casey, Ill. In its early life this field produced an abundance of gas and the wells were operated so that a slight pressure existed on the casinghead; corrosion of tubing and casing was not over severe. In recent years, however, vacuum has been applied at the casinghead to a majority of the wells and the formation gas has become contaminated considerably with air; the corrosion of tubing and casing is extremely severe at present.

Interior Corrosion of Gas Lines

Application of vacuum is probably also the chief cause of oxygen contamination of wet gas from which the gasoline is extracted. Thus residue gas from gasoline plants that have vacuum or semi-vacuum gathering systems often contains considerable oxygen, which results in accelerated interior corrosion of the pipe lines when the gas is transported.

The effect of pressure on gaseous hydrogen sulphide corrosion has not been studied in this investigation. Presumably, an increase in pressure would not affect the oxygen-hydrogen sulphide ratio in the gas but would nevertheless increase the respective concentrations per unit volume. Thus, while a gas containing 0.01 per cent hydrogen sulphide (6.3 grains per 100 cubic feet) at atmospheric pressure (14.7 pounds per square inch) would cause relatively little corrosion if the same gas were compressed to 132.3 pounds per square inch, gauge pressure, the hydrogen sulphide content would still be 0.01 per cent, but nevertheless the content per 100 cubic feet at 132.3 pounds pressure would be increased to 63 grains, at which content rather severe corrosion could be expected if oxygen were present in a suitable concentration.

Conclusions

From the present laboratory investigation of gaseous hydrogen sulphide corrosion of steel, the following is concluded:

1. The presence of oxygen is necessary to cause corrosion.

2. The oxygen-hydrogen sulphide ratio in the gas is the prime consideration in predicting the magnitude of the corrosion. The test apparatus showed that when the ratio was approximately 114, the maximum corrosion was obtained.

3. Gases of relatively low hydrogen sulphide content are more active in producing corrosion in the presence of a small amount of oxygen than are gases containing a relatively large amount of hydrogen sulphide. However, it appears that approximately 0.025 per cent (16 grains per 100 cubic feet) hydrogen sulphide is the lower limit for producing severe corrosion at atmospheric pressure.

4. The corrosion proceeds proportionally with the time, denoting that the scale formed on the metal in these tests is of nonprotective character.

5. In reducing the corrosion in the field, elimination of oxygen from the system should be effected where possible.

Acknowledgments

This investigation was conducted under the direction of the U. S. Bureau of Mines in co-operation with the State of Oklahoma. Thanks are extended to the Parkersburg Rig & Reel Co. from whom the test specimens were procured. The authors are indebted to H. B. Hill, petroleum engineer; Boyd Guthrie, associate chemist; Harold M. Smith, associate petroleum chemist, and A. J. Kraemer, senior refinery engineer, all of the U. S. Bureau of Mines, for criticisms and suggestions in the preparation of the report; also to T. W. Johnson, associate natural gas engineer, and Dale Nichols, assistant petroleum engineer, both of the U. S. Bureau of Mines, for assistance in the construction of the testing apparatus.

IRELAND'S OIL IMPORTS FOR 1931 SHOW ADVANCE

NEW YORK, Apr. 2. — With petroleum consumption falling in many world countries statistics on the Irish petroleum trade for 1931, just released, show a decided trend in the opposite direction. Total imports of refined products into the Irish Free State during 1931 were 66,882,129 gallons, an increase of more than 23 per cent over the 54,197,805 gallons imported in 1930. Comparative imports of principal products were as follows:

	Gallons	
	1931	1930
Gasoline	45,081,992	32,390,282
Kerosene	15,745,826	14,743,878
Lub oil	2,466,308	2,390,641
Gas and fuel oil	3,588,003	4,673,004

It is believed, however, that considerable quantities of products were re-exported during the year, a large bulk terminal having been established near Cork.

FRED J. BEDFORD DIES

Fred J. Bedford, chief engineer for the technical sales department of Magnolia Petroleum Co., died March 16 at his home in Dallas, Tex. Mr. Bedford was born in Oneonta, N. Y., February 4, 1868. In 1911 Mr. Bedford was elected commissioner of finance for the city of Lawton, Okla., and served in that capacity until 1913 when he joined the Magnolia Petroleum Co. as manager of the lubricating department. While in the service of Magnolia he was largely responsible for the designing and marketing of several widely known Magnolia lubricants. He is survived by his wife, Mrs. Christina O'Brien Bedford, to whom he was married in 1896, and eight children.

Statement of the Ownership, Management, Etc., of

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April 1, 1932

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JOHN M. EGAN,
General Manager.

Sworn to and subscribed before me this 29th day of March, 1932.

H. R. BARNETT,
Notary Public.

My commission expires October 3, 1933.

HALF TRUTHS

We are living in an age of great changes, particularly in the field of applied mechanical arts. Developments that today cause little comment would make our forefathers gasp with astonishment. Many of these changes are improvements over the old methods. Many have not yet proven themselves, and still others have already been proven impractical and unsound.

Most of us are too willing to accept the new and the unusual. Skeptics are unpopular but an excellent deterrent to the natural desire to accept statements made under the stress of promoter enthusiasm.

Half truths must be proven before progress is assured, otherwise we have the danger of error rather than progress and failure rather than success.

Don't be misled therefore by claims that this type or that type of a piping connection is the only perfect connection. There is little truth in such exaggerated statements and well can one question the manufacturer who resorts to such broad claims to sell his products.

Accept not a comparison between the shining outstanding example of one practise as against a commonplace example of another practise. Proceed cautiously and with an open mind.

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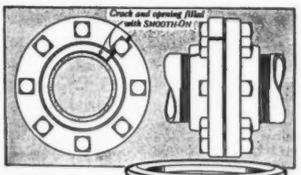

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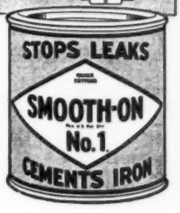

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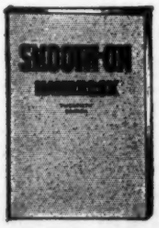

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS
Pipe Line Statement for January

Runs

	Month (bbls.)	Dy.av. (bbls.)
Prairie P. L. Co.*	579,700	18,700
Gulf P. L. Co.	1,534,401	49,174
Texas P. L. Co.	543,721	17,535
Magnolia P. L. Co.	1,579,836	50,962
Empire P. L. Co.	2,610,159	64,844
Cosden P. L. Co.	613,381	19,786
Stanolind P. L. Co.*	3,162,000	102,000
Oklahoma P. L. Co.	2,069,871	66,770
Other lines	4,774,000	154,000
Total January	16,867,049	543,776
Total December	19,796,955	638,611
Difference	2,939,886	94,835

Shipments

Prairie P. L. Co.	1,862,336	60,075
Gulf P. L. Co.	1,792,661	57,828
Texas P. L. Co.	643,195	20,748
Magnolia P. L. Co.	965,559	31,147
Empire P. L. Co.	1,870,655	60,344
Cosden P. L. Co.	688,035	22,195
Stanolind P. L. Co.	3,335,755	107,605
Oklahoma P. L. Co.	2,091,388	67,464
Other lines*	3,007,000	97,000
Total January	16,256,583	524,406
Total December	19,355,129	624,359
Difference	3,098,546	99,953

Stocks

	Bbls.
Prairie O. & G. Co.*	35,341,000
Gulf P. L. and Gypsy Oil Co.	7,726,429
The Texas Company	5,644,634
Magnolia Petroleum Co.	5,474,950
Empire P. L. Co.	4,739,405
Mid-Continent Petroleum Corp.	2,331,484
Stanolind Crude Oil Pur. Co.*	16,250,000
Oklahoma P. L. Co.	1,278,698
Carter Oil Co.	6,161,813
Other lines*	15,166,000
Total January	102,124,015
Total December	102,072,255
Difference	52,760

*Estimated.

EASTERN PIPE LINE REPORT FOR MONTH OF FEBRUARY

Runs from Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Illinois, Indiana and Michigan for January and February:

	Jan., '32	Feb., '32
Nat. Transit	132,346.98	126,753.83
S. W. Pa. P. L.	64,883.40	58,939.34
Eureka P. L.	264,733.46	242,556.95
Buckeye P. L. (Macksburg)	231,436.17	220,174.62
Buckeye P. L. (Cleveland)	12,765.55	10,650.06
Buckeye P. L. (Lima, etc.)	70,902.03	69,769.97
Indiana P. L.	2,957.69	2,432.39
N. Y. Transit	42,434.50	42,479.85
Tide Water P. L.	21,527.15	23,346.91
Pure Oil	343,184.55	291,502.56
Stoll Oil Ref.	61,955.78	60,332.05
Bradford Tran.	409,404.66	358,619.95
Ashland Ref.		101,901.07
Total	1,658,531.92	1,609,459.55
Daily avg.	53,501.03	55,498.61

Petroleum Deliveries

The following table exhibits the shipments or regular deliveries in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for January and February:

	Jan., '32	Feb., '32
Nat. Transit	546,544.24	521,574.03
S. W. Pa. P. L.	327,706.71	393,740.87
Eureka P. L.	266,908.78	254,915.43
Buckeye P. L. (Macksburg)	247,543.60	197,422.31
Buckeye P. L. (Cleveland)	1,710.80	1,468.37
Buckeye P. L. (Lima, etc.)	1,483,164.35	1,256,890.69
Indiana P. L.	720,776.96	684,052.57
Southern P. L.	45,091.84	29,866.72
N. Y. Transit	160,691.41	164,942.57
Northern P. L.	167,659.81	149,660.95
Tide Water P. L.	582,162.04	373,538.58
Pure Oil	322,591.72	323,613.28
Bradford Tran.	604,570.61	252,933.43
Tuscarora	305,988.46	291,210.02
Total	5,783,109.33	4,925,830.92
Daily avg.	186,551.91	169,856.24

Gross Stocks

The gross stocks held by various pipe lines in the oil-producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of January and February:

	Jan., '32	Feb., '32
Nat. Transit	708,300.22	714,830.78
S. W. Pa. P. L.	452,222.36	404,242.41
Eureka P. L.	1,218,191.97	1,260,183.19
Buckeye P. L. (Macksburg)	265,000.88	286,436.07
Buckeye P. L. (Cleveland)	38,136.48	47,411.90
Buckeye P. L. (Lima, etc.)	3,936,849.21	2,956,771.37
Indiana P. L.	520,692.84	513,552.31
Cumberland P. L.	64,500.81	
Southern P. L.	258,415.23	241,444.27
N. Y. Transit	198,406.61	195,495.84
Northern P. L.	324,194.85	306,733.15
Tide Water P. L.	974,418.35	863,043.42
Pure Oil	887,230.61	889,617.38
Tuscarora	10,920.81	10,806.74
Bradford Trans.	156,443.22	238,781.30
Total	9,023,914.45	8,974,350.13
Decrease	95,118.08	49,564.32

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern pipe lines at the close of January and February, showing gross stocks of the above fields:

	Jan., '32	Feb., '32
Penna.	3,219,630.21	3,178,872.84
Lima	602,805.09	599,253.26
Kentucky	74,908.32	10,011.59
Mid-Continent	4,306,150.37	4,329,220.63
Illinois		22,580.52
Michigan	820,420.46	834,401.29
Total	9,023,914.45	8,974,350.13

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1929	1930	1931	1932
Jan.	51,749	75,907	53,939	53,501
Feb.	51,833	79,256	55,163	55,498
Mar.	54,252	76,688	54,331	.....
April	58,444	84,536	54,914	.....
May	59,902	70,546	53,344	.....
June	58,833	75,430	54,110	.....
July	66,087	68,921	50,722	.....
Aug.	66,087	54,291	51,503	.....
Sept.	67,315	56,595	61,345	.....
Oct.	76,093	58,179	65,595	.....
Nov.	74,831	52,332	59,819	.....
Dec.	74,561	53,999	61,835	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1929	1930	1931	1932
Jan.	165,721	217,623	175,369	186,551
Feb.	159,387	224,355	183,494	169,856
Mar.	161,474	228,846	189,508	.....
April	169,737	241,845	191,450	.....
May	184,281	248,383	199,247	.....
June	185,404	234,401	221,155	.....
July	194,763	207,094	211,632	.....
Aug.	194,946	205,506	224,166	.....
Sept.	201,214	193,599	217,537	.....
Oct.	191,367	157,875	210,331	.....
Nov.	202,743	146,638	196,425	.....
Dec.	186,257	143,001	176,241	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1930	1931	1932
Jan.	12,220,045	11,831,092	9,023,914
Feb.	12,991,561	11,506,489	8,974,350
Mar.	13,247,217	11,012,162	.....
April	13,233,961	11,044,481	.....
May	13,052,953	10,725,239	.....
June	13,396,855	9,903,349	.....
July	13,268,562	9,569,849	.....
Aug.	13,047,051	9,192,457	.....
Sept.	12,812,013	8,492,431	.....
Oct.	12,437,553	8,417,694	.....
Nov.	11,851,380	8,830,386	.....
Dec.	11,751,952	9,119,032	.....

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, March 1	549,565.31
Runs from wells	459,214.59
Regular deliveries	186,010.30
Other deliveries	207,879.43

The amount of Illinois oil run by the Tide Water Pipe Co. in February was 23,346.91 bbls. Deliveries were none. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1932—	Runs	Deliveries
January	500,177.13	246,634.10
February	482,561.50	186,010.30
1931—		
January	468,429.04	469,573.19
February	429,284.54	461,262.85
March	424,638.23	356,663.36
April	421,814.98	282,532.65
May	433,231.80	322,513.95
June	510,805.78	320,258.13
July	520,009.38	289,219.05
August	476,623.56	393,231.06
September	492,183.83	323,012.50
October	498,124.13	325,834.95
November	470,302.62	231,258.48
December	515,771.28	306,623.19

Tide Water Pipe Co., Ltd., also delivered in February, 496,060.73 bbls. of Oklahoma oil.

AVERAGE DAILY IMPORTS OF CRUDE AND REFINED OIL AT PRINCIPAL UNITED STATES PORTS

Average barrels per day in 1931—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
March	27,645	18,935	141,160	26,290	21,129	238,161	4,065	2,580	.....	1,968	8,613	246,774
April	35,000	10,533	105,000	29,767	35,533	215,833	2,733	3,400	.....	.....	6,133	221,966
May	30,129	8,774	107,000	25,452	26,710	198,065	.....	2,000	.....	.....	2,000	200,065
June	30,067	10,833	111,767	27,000	20,833	200,500	3,300	5,500	2,167	1,333	12,300	212,800
July	26,387	11,326	104,678	29,323	21,773	193,387	6,903	7,419	4,194	.....	18,516	211,903
August	32,613	15,581	91,742	23,387	25,741	188,064	4,161	2,516	.....	3,162	9,839	197,903
September	27,067	7,267	106,867	30,099	22,967	184,267	4,833	8,333	.....	.....	13,166	197,433
October	53,710	14,484	100,774	26,742	40,645	236,355	6,097	6,871	2,097	1,838	16,903	253,258
November	48,033	28,800	51,667	28,600	12,967	170,067	3,933	10,833	3,033	1,367	19,166	189,233
December	20,258	16,806	121,807	31,645	34,258	224,774	1,968	4,355	.....	.....	6,323	231,097
January	19,161	8,161	104,065	24,194	34,903	190,484	4,871	7,226	2,096	1,484	15,677	206,161
February	32,483	16,517	128,483	28,862	34,552	240,897	2,034	5,207	4,310	1,379	12,930	253,827

AVERAGE DAILY RECEIPTS OF CALIFORNIA CRUDE AND REFINED OIL AT ATLANTIC AND GULF PORTS

Average barrels per day in 1931—	ATLANTIC PORTS: Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS: Galveston	New Orleans, Baton Rouge	Port Arthur, Sabine Pass	Tampa	Total	Total all ports
March	10,032	1,611	21,388	7,324	8,774	49,129	.....	.....	.....	.....	6,355	55,484
April	5,133	.....	19,200	16,500	10,067	50,900	.....	.....	.....	.....	4,000	54,900
May	4,452	3,064	19,903	11,226	6,258	44,903	.....	.....	.....	.....	2,355	47,258
June	4,267	.....	25,100	6,333	3,500	39,200	.....	.....	.....	.....	.....	39,200
July	6,774	1,194	24,612	11,065	9,902	53,548	.....	.....	.....	.....	1,335	54,903
August	3,452	.....	16,419	7,419	4,290	31,580	.....	.....	.....	.....	968	32,548
September	4,267	2,667	12,933	4,699	7,367	32,933	.....	.....	.....	.....	4,000	36,933
October	2,355	1,129	19,290	16,709	9,323	48,806	.....	.....	.....	.....	3,323	52,129
November	1,000	.....	22,800	11,567	.....	35,367	.....	.....	.....	.....	3,366	38,733
December	3,161	.....	22,484	8,839	6,032	40,516	.....	.....	.....	.....	7,742	48,258
January	3,871	1,710	14,483	3,774	5,710	29,548	.....	.....	.....	.....	.....	29,548
February	3,069	.....	9,103	4,862	.....	17,034	.....	.....	.....	.....	2,483	19,517

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

(In Barrels of 42 Gallons)

1931—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
February:	Month	14,930,932	13,531,950	18,957,571	3,341,016	1,402,492	1,981,616	2,747,024	3,129,000	60,021,621
	Daily average	533,248	483,355	677,057	119,322	50,089	70,772	98,108	111,750	2,143,639
March:	Month	16,364,842	16,627,687	23,453,619	3,498,598	1,469,245	2,061,576	2,898,035	3,374,000	68,747,602
	Daily average	527,898	536,377	724,310	112,858	47,395	66,502	93,485	108,839	2,217,665
April:	Month	15,803,541	16,815,990	26,887,717	3,281,880	1,413,220	2,008,021	2,901,870	3,273,000	72,384,239
	Daily average	526,785	559,255	896,257	109,396	47,074	66,934	96,729	109,100	2,412,808
May:	Month	16,448,960	17,333,867	28,708,684	3,341,366	1,446,274	2,232,563	3,093,419	3,190,000	75,800,133
	Daily average	530,612	559,157	926,086	107,786	46,654	72,018	99,949	102,900	2,445,166
June:	Month	15,641,436	16,678,200	29,139,833	3,175,440	1,344,450	1,850,511	2,956,200	3,166,000	73,982,070
	Daily average	521,381	555,940	971,327	105,848	44,815	61,684	98,540	105,533	2,466,069
July:	Month	16,093,322	16,420,080	33,827,213	3,089,532	1,287,585	1,715,730	2,905,909	3,341,000	78,680,671
	Daily average	519,139	529,680	1,091,200	99,672	41,535	55,346	93,739	107,774	2,538,073
August:	Month	15,668,584	9,517,279	32,279,816	3,141,323	1,165,569	1,584,444	2,807,143	3,167,000	69,331,558
	Daily average	505,451	307,009	1,041,284	101,333	37,599	51,111	90,553	102,161	2,236,502
September:	Month	15,180,610	7,946,850	28,981,525	3,147,030	1,138,350	1,641,384	2,761,230	3,632,000	64,429,029
	Daily average	506,020	264,894	966,051	104,901	37,945	54,713	92,041	121,067	2,180,968
October:	Month	15,651,983	12,951,893	30,725,173	3,177,066	1,172,389	1,822,255	2,797,597	3,900,000	73,198,356
	Daily average	504,903	417,803	991,134	102,486	37,819	58,782	90,247	125,807	2,328,979
November:	Month	14,997,700	12,436,730	28,860,561	3,121,870	1,130,700	1,851,677	2,706,390	3,639,000	72,748,338
	Daily average	499,922	547,691	962,018	104,389	37,690	61,719	90,213	121,300	2,424,944
December:	Month	15,560,984	16,598,299	27,767,651	3,198,642	1,082,148	1,971,817	2,815,759	3,645,000	72,641,300
	Daily average	501,967	535,429	903,860	103,182	34,908	63,607	90,863	117,581	2,343,298
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January:	Month	15,532,141	13,695,986	25,744,105	3,169,347	1,064,385	1,696,017	2,822,023	3,586,000	67,290,004
	Daily average	501,037	446,806	830,455	102,237	34,335	54,710	91,033	115,037	2,170,645
Total 12 months		187,875,435	174,549,881	334,333,468	38,693,210	15,115,837	22,417,516	34,248,599	41,022,000	848,254,946
Daily average		514,727	478,219	915,979	106,009	41,413	61,418	93,831	112,389	2,323,986